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FREQUENCY CHARACTERISTICS OF HEART AND LUNG SOUNDS

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In auscultation, the physician is interested in a variety of normal and abnormal sounds produced within the human body. The nature of organic lesions can often be determined by a careful study of these sounds. The quality of the sounds, as interpreted by the ear, depends on two factors: (1) the relative intensities of the various frequency components that make up the whole, and (2) the relative sensitivity of the ear at these frequencies.[1] By the term frequency is meant, of course, complete cycles (or vibrations) per second. Although the quality and pitch of the sounds do not indicate directly the conditions that give rise to them, by any process of *a priori* reasoning, nevertheless we know by experience, corroborated by postmortem examinations, that these factors have definite significance. It is therefore of interest to know as much as possible about the exact physical characteristics of the sounds commonly encountered in auscultation.

The physician usually describes the quality of the sounds he hears by adjectives, which either imitate them in spoken syllables or convey the idea of relative intensity and pitch. For example, the following descriptive words are quite generally used for murmur sounds: musical, whistling, tearing, scratchy, rough, harsh, rolling, soft, blowing, faint, moderately loud, loud and low pitched, moderately low or moderately high pitched, and high pitched. For breathing sounds he uses words such as: breezy, rough, high pitched and low pitched; and for râles, crackling, coarse, fine, moist, musical.

It is evident that many of these terms are purely relative, and only by experience and mutual agreement can any reasonable degree of uniformity in phraseology be attained. The sounds are obviously complex. Very few of them appear as simple musical tones characterized by a definite musical pitch. Most are made up of a mixture of frequency components of various intensities within certain regions on the frequency scale. If there is a predominant amount of energy of high frequencies, the murmur is described as "high pitched." In the same way, if there is a predominance of low frequencies, the murmur sounds "low pitched." In the analyses of heart and lung sounds that follow, the physical significance of some of these terms is brought out.

Until recently there has been little quantitative information or data available from which even an approximate idea of the important frequencies in body sounds could be obtained.

The development of the electrical stethoscope,[2] however, has changed the situation greatly. Once the sounds have been converted into the corresponding electrical vibrations, the highly developed technic of analysis in telephony becomes available for critical investigations. Besides the vacuum-tube amplifier, which makes possible practically unlimited magnification without appreciable distortion, the most useful electrical tool in this analysis has been the so-called electric filter.[3] This is a device by means of which all components of any sound above or below any desired frequency may be eliminated without affecting materially the other components to which we wish to listen.

By means of the electrical stethoscope, sounds of immediate interest, such as a particular heart murmur, have been compared first with and then without a particular filter in the circuit. If the introduction of the filter diminished the intensity of the sounds or modified their character by eliminating a portion of them, it was obvious that a part at least of the energy lay in the band of frequencies suppressed by the filter. These results, though based on the auditory method, which does not give very great quantitative accuracy, are of distinct value, since the same method can be used practically wherever the electrical stethoscope is available.

By means of any one of the "low pass" filters, the sound vibrations above a definitely fixed "cut-off" frequency can be weakened to inaudibility. By means of "high pass" filters, the sound vibrations below definite frequencies can be weakened in like manner. To find the upper frequency limit of each murmur, it is only necessary to insert into the circuit low pass filters of successively higher cut-off frequencies until one is found that just fails to alter the character of the sounds. To find the lower frequency limit, a similar procedure is followed with high pass filters. By this means, a frequency band can be determined within which all the audible components of the murmur sounds fall.

The filters employed for these analyses had the cut-off frequencies given in the accompanying table.

To assist those who are more familiar with the musical notation, frequencies in cycles per second will

1. Fletcher, Harvey: Physical Measurements of Audition, J. Franklin Inst., 196, No. 3, September, 1923.

2. Gamble, C. J., and Replogle, D. E.: A Multiple Electrical Stethoscope for Teaching, J. A. M. A. **83**: 388 (Feb. 2) 1924. Frederick, H. A. and Dodge, H. F.: The Stethophone, An Electrical Stethoscope, Bell System Tech. J. **3**: 531 (Oct.) 1924.

3. Gamble, C. J.: The Multiple Electrical Stethoscope and Electrical Filters as Aids to Diagnosis, J. A. M. A. **83**: 1230 (Oct. 18) 1924. Campbell, G. A.: Physical Theory of Electrical Wave Filters, Bell System Tech. J., November, 1922.

be followed parenthetically by approximate musical notes in the text; thus: 660 cycles per second (e″).

It is obvious that the frequency figures associated with the different types of thoracic sounds in our discussions and conclusions are dependent on the particular filters chosen for this work, so that a rather liberal interpretation of them must be made. With a larger number of filters, it would have been possible to identify the sounds in the individual cases more accurately by associating them with narrower frequency bands. But with the foregoing selection of filters, a satisfactory preliminary study has been carried on.

The clinical material used in this work was secured at the Massachusetts General Hospital in Boston and the University of Pennsylvania Hospital in Philadelphia. At the Massachusetts General Hospital, the sounds were observed and described from the medical standpoint by one of us (R. C. C.). At the University of Pennsylvania Hospital, this work was done by Dr. C. J. Gamble, to whom we are indebted for the additional cases.

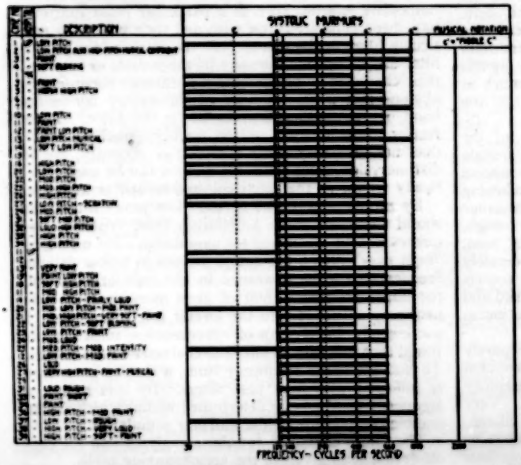

Chart 1.—Frequency characteristics of cardiac sounds.

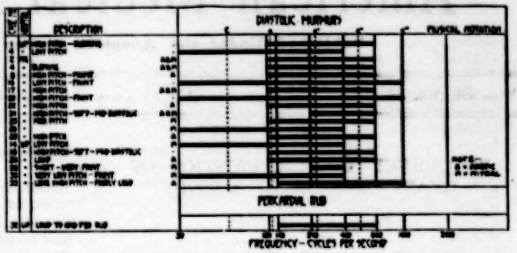

Chart 2.—Frequency characteristics of cardiac and pericardial sounds.

MURMURS

In Charts 1, 2 and 3, the frequency band within which all the audible components of each murmur sound fell is heavily shaded. The uniform shading does not imply that the sound energy was distributed uniformly over the band. This is far from true in a majority of cases. In general, the components of the sounds that contribute most generously to the total loudness can be assigned to a rather narrow portion of the frequency band shown, but the weaker components which reside in the remainder of the band are important contributors to the quality of the sounds. In this paper, no attempt has been made to show how the sound energy is distributed over a given band, or to establish the significance of any of different energy-frequency distributions. Further work along this line should contribute valuable information.

The cut-off frequencies of the filters are given at the bottom of the charts, and the musical notation scale at the top. To the left are given the numbers of the cases, the hospital at which the observations were made (MG signifies Massachusetts General Hospital and UP, University of Pennsylvania Hospital), and the description of the murmur sounds as given by the observer.

PRESYSTOLIC MURMURS

Chart 1 shows the results of analyses of ten presystolic murmurs. It is seen that in general the sounds produced by these murmurs are made up of relatively low frequencies below 400 cycles per second (g^{3}′). In four cases the audible components were all below 140 cycles per second (d). Presystolic murmurs appear to cover approximately the same frequency range as the normal heart sounds.

SYSTOLIC MURMURS

Chart 2 shows the results of analyses of fifty systolic murmurs. Here there is a considerable amount of variation in the frequency bands for the murmurs of different quality. It is seen, however, that the most important band is from 120 to 660 cycles per second (B to e″). Many of the low pitched systolic murmurs have important components below 120 cycles per second (B), and some high pitched ones are characterized by relatively high frequency components between 660 and 1,000 cycles per second (e″ and e‴).

DIASTOLIC MURMURS

For the eighteen diastolic murmurs shown in Chart 3, the most important frequency band is from 120 to 660 cycles per second (B to e″), as in the case of systolic murmurs. The energy of the sounds of these two general classes of murmurs apparently falls in this same general band of frequencies, although there is a material amount of variation in individual cases. In two of eighteen cases, the frequencies were entirely above 240 cycles per second (b). In only one of thirty-nine systolic murmurs was the lower limit of the frequency band so high.

Several of the cases are marked A or M, which denote murmurs of aortic or mitral origin. We have not been able to show any consistent difference in the

frequency characteristics of diastolic murmurs of aortic and mitral origin.

PERICARDIAL RUB

In the course of these investigations, we chanced on a single case of pericardial rub. Analysis showed that the sound thus produced fell within the same general frequency band as for the most commonly occurring type of systolic and diastolic murmurs.

LUNG SOUNDS

In Chart 4 are given the analyses for eight cases of râles, one of amphoric breathing and four of bronchial breathing. For râles, the most important band is from 120 to 1,000 cycles per second (B to c″). Coarse râles have a proportionately greater amount of low frequency components, and frequencies above 660 cycles per second (e″) are generally of no importance. As with the murmurs, the frequency range of importance varies considerably with individual cases. Breathing sounds have relatively less low frequency components. The energy of these sounds lies above 240 cycles (b) and below 1,000 cycles per second (c″).

Cut-Off Frequencies of Filters

LOW PASS Excluding all Vibrations ABOVE the Following		HIGH PASS Excluding all Vibrations BELOW the Following	
FREQUENCY Cycles per Second	MUSICAL NOTATION Approximate Musical Note	FREQUENCY Cycles per Second	MUSICAL NOTATION Approximate Musical Note
95	G	120	B
* 140	d	240	b
230	a♯	* 375	g′
400	g♯	* 500	c″
660	e″	* 750	g″
1,000	c‴		
* 1,400	f‴		
* 2,600	e⁗		

* Filters marked * were used initially but were not found sufficiently useful to warrant their inclusion in the major part of the work.

CONCLUSIONS

Practically all the sounds of interest in auscultation are made up of frequencies below 1,000 cycles per second (c″). In general, the upper and lower frequency limits for the pathologic sounds in any particular case are not sharply defined.

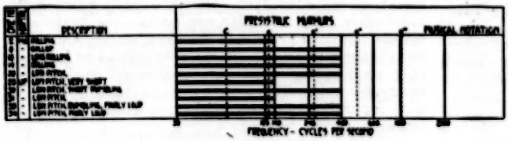

Chart 3.—Frequency characteristics of cardiac sounds.

Presystolic murmurs as a class are characterized by a greater predominance of low frequencies than other murmurs, and are almost invariably termed "low pitched."

The frequency bands of importance in systolic and diastolic murmurs are broadly the same. In each group, extremely low pitched and high pitched cases are found, but there appears to be nothing in the quality of the sounds that is characteristic of murmurs occurring in systole or diastole. In our limited studies, we have not been able to associate a particular frequency band with murmurs produced by a lesion of a given kind.

Lung sounds, as a class, have a proportionately smaller amount of low frequency components than heart sounds. The descriptive words "coarse" and "fine," as applied to râles, are usually associated with conspicuous "low" and "high" frequency components.

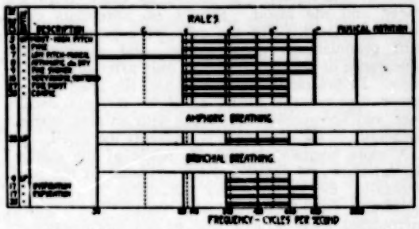

Chart 4.—Frequency characteristics of pulmonary sounds.

Breath sounds are, broadly, higher pitched than most heart sounds, as evidenced by the scarcity of components below 240 cycles per second (b).

THE MECHANISM OF THE FORMATION OF SARCOMA*

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In a previous article,[1] a description was given of the process by which blood macrophages inoculated in vitro with filtered extract of Rous sarcoma become transformed into malignant cells. The comparison of the normal and malignant strains showed that the sarcomatous monocyte is a diseased cell which is short lived, digests fibrin rapidly, transforms itself readily into fibroblasts, and reproduces the Rous principle. During this process, the culture assumes the appearance of a geographic map or moth-eaten cloth. It reminds one of the clear areas that Twort observed developing in his cultures of micrococcus after he had inoculated them with the lytic principle, called later bacteriophage by d'Herelle. In those areas, the micrococci underwent lysis and regenerated the lytic principle, and the phenomenon could repeat itself indefinitely. In an analogous manner, the macrophages inoculated with filtered sarcoma reproduce the Rous substance and die. The malignant element of the tumor is not an anarchic cell, but merely a sick one.

After the main characteristics of Rous sarcoma cells had been thus studied, we attempted to ascertain whether they also belong to other tumors; that is, whether they are the expression of properties common to all sarcoma cells.

The growth in vitro of a number of tumors, such as spindle cell and round cell sarcomas of fowls, mouse sarcoma, human spindle cell sarcoma, chicken coal tar sarcomas, arsenic sarcomas and recurrent teratomas, was always found to be characterized by the migration of ameboid cells and of fibroblasts that were more or less diseased. The wandering cells resembling macrophages, which first invaded the medium, were filled

* From the Laboratories of the Rockefeller Institute for Medical Research.

1. Carrel, Alexis: Essential Characteristics of a Malignant Cell, J. A. M. A. 84:157 (Jan. 17) 1925.

with granulations, and generally died after less than forty-eight hours. Their life was very much shorter than that of the ameboid cells from the spleen or bone marrow of the adult animal. In only a few instances was it possible to obtain from these tumors pure cultures of macrophages as active as those from the spleen and the blood. Strains of fibroblasts could also be isolated. But the cells were generally filled with granulations, grew slowly, and assumed the appearance of normal fibroblasts only after several passages. In practically every instance, the fragments of tumor digested the fibrin, as Rous sarcoma usually does, and surrounded themselves with an area wherein the acidity of the medium was markedly increased.

A more complete study was made of the cultural characteristics of some coal tar sarcomas of the fowl. Generally, the cultures did not differ markedly in appearance from those of Rous sarcoma. The fragment surrounded itself with a ring of polymorphonuclears and macrophages, and sometimes of lymphocytes, which died rapidly. Very soon, a large number of fibroblasts invaded the medium, and typical areas of digestion appeared. Pure cultures of macrophages and of fibroblasts were obtained from the original cultures in the same manner as from Rous sarcoma. As the grafting of chickens with the cultures of ameboid cells gave rise to rapidly growing tumors, it became clear that in the tar tumor the macrophage is also the carrier of the malignant characteristic. At the same time, inoculation with the supernatant fluid of the medium determined in chickens the development of malignant tumors. This indicated that probably the tar sarcoma secretes a substance capable of transmitting the disease.

As such a phenomenon would have a very important bearing on our understanding of the formation of tumors, a series of experiments was begun to ascertain whether macrophages can be transformed in vitro into malignant cells by a filtered extract of tar sarcoma.

At first, a filtered extract was obtained from an osteochondrosarcoma of comparatively little activity. This tumor developed from a graft of embryonic pulp into a chicken that had been injected subcutaneously in another part of the body with coal tar. It grew slowly, recurred after extirpation, and gave rise to small tumors on inoculation into other animals. The filtered extract of the first passage tumor was injected into cultures of spleen. After a few days, small areas of digestion were observed in the medium, containing clumps of dead cells and amorphous tissue. For several passages, after the patching of the culture, the phenomenon reproduced itself. In some ways, it resembled the transformation of a culture of monocytes into Rous sarcoma. But on inoculation of these cultures into chickens, no tumors developed.

Then the same experiments were repeated with filtered extract of McFaul tar sarcoma. This tumor is an extraordinarily malignant spindle cell sarcoma, obtained recently by Miss McFaul in this laboratory, and is characterized by its rapid invasion of normal tissues and the early production of lung metastases. It develops as does an acute disease and kills the animals in five or six days. After cultures of spleen had been inoculated with the filtered extract of this tar tumor, small areas of digestion appeared in the coagulum. The macrophages died in large numbers and formed masses of amorphous tissue, as happens in cultures infected with Rous substance. However, the areas of digestion were generally less numerous and profound than in the case of Rous sarcoma. On the other hand, the inoculation of filtered extract of the tar sarcoma into chickens produced malignant tumors which grew more rapidly than Rous sarcoma. To summarize: the filtered extract of tar sarcoma brought about in vitro a transformation of macrophages resembling in certain respects that induced by filtered extract of Rous sarcoma, and determined in vivo the development of very malignant tumors.

These new facts have a profound significance. They show that the characteristics of the Rous sarcoma belong also to other tumors, and especially to coal tar sarcoma. Rous sarcoma can no longer be regarded as an infective sarcoma, or a peculiar disease differing from typical malignant tumors, as some pathologists still believe. There is no fundamental difference between Rous sarcoma and tar sarcoma cells. It is, then, probable that the properties that we described as characteristic of the Rous cell are common to all sarcomatous cells. The nature of the filtrable substance of tar sarcoma is still unknown. But evidently it is not an ultramicroscopic organism. Neither is the Rous principle, as it has analogous properties. The filtrable agents of both Rous and tar sarcoma may be considered as originating from the cells themselves.

Therefore, the mechanism of the formation of a tar sarcoma can be understood in the following manner: When coal tar, or a principle resulting from the action of tar on some constituents of the humors or tissues, affects cells in the process of division, such as embryonic cells or macrophages, a substance is formed which is analogous to that described by Rous. This substance, like the lytic principle of Twort, has the power of determining a special disease and eventually the death of certain cells, and at the same time of reproducing itself. Possibly there is no other relation than an analogy between the two phenomena. But, like bacteriophage, the filtered extract of either Rous or tar sarcoma determines within the cells a phenomenon that reproduces itself indefinitely. Tar sarcoma appears to be a self-perpetuating disturbance of the metabolism created by the action on embryonic cells of a substance related directly or indirectly to coal tar. A similar phenomenon may bring about the formation of other tumors. It is possible that certain substances produced by bacteria and helminths, or resulting from roentgen-ray burns, determine in macrophages and other cells, as does coal tar, a disturbance that afterward propagates itself indefinitely. By a similar mechanism, the toxic substances normally present in the blood during adult life and old age might act on the dividing cells of an irritated area as does the serum of tar-injected chickens on embryonic pulp. This simple process might be responsible for the spontaneous production within the organism of malignant tumors.

Open Air Schools and School Rooms in New York.—We now have nineteen cities and one village in which open air classes are conducted. Approximately 1,000 children are receiving special attention in these classes. Those admitted are of the anemic type, the poorly nourished, the pretuberculous or contact cases, the cardiopathic, and others needing the vitalizing influences of fresh air, sunshine, extra feeding and rest. Children in these classes suffer less from colds and other illnesses than do pupils in closed rooms, and the former are more regular in their attendance. Nearly all improve rapidly, both mentally and physically. In from six to eight months, most are returned to the rooms from which they came. Experience with children in open air classes is convincing that every school child would be benefited by better air, more sunshine, proper feeding, and sufficient rest.—Howe, W. A.: *Am. J. Pub. Health* **15**:308 (April) 1925.

CHEMOTHERAPEUTIC STUDIES IN RABIES *

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These studies were conceived with the idea that possibly the use of some of the more recently used chemotherapeutic compounds might have an effect on the virus of rabies and also divulge a lead to the successful treatment of other diseases, the etiology of which is classified as an ultramicroscopic virus.

It should be borne in mind that the marked neurotrophic affinity of rabies virus and the inability of the majority of chemical compounds to penetrate to the central nervous system in therapeutic quantity following administration by any of the known practical methods, especially intravenously, are two of the outstanding obstacles in the path of successful treatment. Also such compounds possessing somewhat marked germicidal properties, when injected intravenously in diseases of bacterial and protozoan etiology, are so markedly organotrophic when injected directly into the spinal canal, even in subtherapeutic doses, as to make their use by this route impracticable.

TABLE 1.—*Results of Combined Test*

Rabbit	Compound and Dilution Used	Results: Slight Symptoms	Results: Comatose
1	Sulpharsphenamin, 1:200	6 days	7 days
2	Flumerin, 1:500	6 days	7 days
3	Flumerin, 1:1,000	7 days	9 days
4	Sodium-oxymercury-orthonitrophenolate, 1:1,000	6 days	7 days
5	Infected control	6 days	7 days

Few reports are available on the administration of chemical substances in experimental rabies. Friedberger and Sachs,[1] in 1908, using a mixture of atoxyl and thioglycholic acid, reported that they were able to prolong the incubation period of fixed virus infections in rabbits in one instance, and prevent infection in another; but with arsenophenylglycin their results were negative. In more recent years, the salts of quinin have received considerable attention, chiefly because of the experiments of Moon,[2] who in 1913 reported the recovery of three dogs experimentally infected with street virus when treated with quinin, and again in 1915,[3] from further experimentation, reported that "the results indicate that the organism which causes rabies is influenced to some extent by quinin." Cummings,[4] Frothingham and Halliday,[5] and Krumwiede and Mann[6] were unable to confirm the results obtained by Moon.

The experiments reported here were conducted on rabbits, fixed virus (rabbit medulla) being used for infection. All injections were made intracranially. The emulsion for infection was prepared by suspending a piece of medulla 0.5 cm. long in 4 c.c. of sterile physiologic sodium chlorid solution. The infective dose always consisted of 0.2 c.c. unless otherwise indicated.

Table 1 shows the results of a combined in vitro and in vivo test with sulpharsphenamin, flumerin and sodium-oxymercury-orthonitrophenolate. An equal quantity of infected brain emulsion and compound was thoroughly mixed and held in a water bath of 38 C. for thirty minutes, and 0.2 c.c. was injected intracranially. A salt solution control was also conducted.

Neo-arsphenamin in a dilution of 1:200 was also used in the foregoing experiment, but on injection caused death within five minutes. The results of this experiment indicate that sulpharsphenamin, flumerin and sodium-oxymercury-orthonitrophenolate in the dilution mentioned have no effect on fixed rabies virus after an exposure of thirty minutes at 38 C.

The therapeutic effect of gentian violet, neo-arsphenamin, sulpharsphenamin, potassium bismuth tartrate, ethylhydrocuprein hydrochlorid, quinin and urea hydrochlorid and mercurochrome-220 soluble was also studied in infected rabbits, the results of which are given in detail in Table 2. All the compounds were injected intravenously except potassium bismuth tartrate, which was injected intramuscularly. Treatment was started in most rabbits within twenty-four hours after infection, and continued daily. In other rabbits, treatment was not started until slight symptoms appeared, and was continued at twenty-four hour intervals. The dose of each compound was injected on a body weight basis.

TABLE 2.—*Results of Tests with Various Antiseptics and Germicides*

Compound	Rabbit	Dose per Kilogram Body Weight, Gm.	Interval Between Infection and First Dose	Interval Between Subsequent Doses of Compound	Total Doses Before Symptoms	Total Doses After Manifestation of Symptoms	Symptoms of Rabies, Days	Died, Days
Gentian * violet	1	0.010	24 Hrs.	72 Hrs.	2	1	6	7
	2	0.010	24 Hrs.	72 Hrs.	2	2	6	8
Neo-arsphenamin	3	0.015	24 Hrs.	72 Hrs.	2	0	5	5
	4	0.020	5 days	24 Hrs.	0	4	5	8
Sulpharsphenamin	5	0.015	24 Hrs.	72 Hrs.	2	0	5	7
	6	0.020	5 days	24 Hrs.	0	4	5	7
	7	0.010	4 Hrs.	24 Hrs.	6	3	7	10
	8	0.010	4 Hrs.	24 Hrs.	5	5	6	11
Potassium † bismuth tartrate	9	0.05	2 Hrs.	24 Hrs.	4	0	5	7
	10	0.1	2 Hrs.	24 Hrs.	4	0	6	7
	11	0.125	5 days	24 Hrs.	0	3	5	8
	12	0.125	5 days	24 Hrs.	0	3	5	7
Ethyl-hydro-cuprein hydrochlorid	13	0.005	4 Hrs.	24 Hrs.	4	5	5	10
	14	0.005	4 Hrs.	24 Hrs.	4	0	5	11
	15	0.005	4 Hrs.	24 Hrs.	4	5	5	10
Quinin and urea hydro-chlorid	16	0.005	4 Hrs.	24 Hrs.	5	4	6	10
	17	0.005	4 Hrs.	24 Hrs.	6	3	7	10
Mercuro-chrome-220 soluble	18	0.005	4 Hrs.	24 Hrs.	6	3	7	10
	19	0.005	4 Hrs.	24 Hrs.	6	3	7	10

Three infected and untreated control rabbits manifested symptoms in six and seven days, and died in ten days.
* Coleman and Bell gentian violet.
† Contained 66.19 per cent. bismuth; this compound was suspended in olive oil and injected intramuscularly.

CONCLUSION

When fixed rabies virus is suspended in a 1:200 dilution of sulpharsphenamin, 1:500 and 1:1,000 dilution of flumerin, and a 1:1,000 dilution of sodium-oxymercury-orthonitrophenolate, no germicidal effect was exerted within thirty minutes at 38 C., as evidenced by the production of symptoms and death when inoculated intracranially into rabbits. If the virus was influenced at all, it was not sufficient to prolong the incubation period, which was the same in the control and treated animals. No effect was observed following the injection of gentian violet, neo-arsphenamin, sulph-

* From the Research Institute of Cutaneous Medicine.

1. Friedberger, E., and Sachs, F.: Ztschr. f. Immunitätsforsch. u. exper. Therap. 1: 161, 1908.
2. Moon, V. H.: J. Infect. Dis. 12: 165, 1913.
3. Moon, V. H.: J. Infect. Dis. 16: 58, 1915.
4. Cummings, J. G.: J. Infect. Dis. 15: 205, 1914.
5. Frothingham, L., and Halliday, J.: J. M. Res. 30: 225, 1914.
6. Krumwiede, J. C., and Mann, A. G.: J. Infect. Dis. 16: 24, 1915.

arsphenamin, potassium bismuth tartrate, ethylhydrocuprein hydrochlorid, quinin and urea hydrochlorid or mercurochrome-220 soluble, either preventive or curative. No prolongation of the incubation period was noted even when some of the compounds were injected as early as from two to four hours after infection, and continued daily until death.

2101 Pine Street.

HIGH BLOOD SUGAR WITH ABSENCE OF SUGAR IN THE URINE

IN DIABETES TREATED WITH INSULIN *

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During the last two years we have seen several patients who showed high values for blood sugar but nevertheless had no sugar in the urine. Since all these patients were receiving insulin and were, with one exception, young, this finding seemed of interest and possible importance.

Blood Sugar Findings

Patient	Age	Date	Blood Sugar	Urine Sugar
1	35	12/17/23	345	0
		7/ 7/24	425	0
2	27	7/18/24	350	0
		9/ 8/24	370	0
		10/15/24	220	0
3	72	5/12/23	303	0
4	34	10/20/23	250	0
5	26	4/11/24	313	0
		4/15/24	225	0
		4/21/24	394	0
		4/23/24	338	0
		4/25/24	256	0
6	15	10/10/24	250	0
		10/13/24	338	0
		10/15/24	196	0
		10/17/24	286	0
		10/20/24	241	0
		10/21/24	250	0
		10/23/24	333	0
7	35	12/ 5/24	333	0
		12/ 6/24	327	0
		12/10/24	296	0
		12/19/24	298	0
8	11	12/ 8/24	363	0
		12/10/24	357	0
		12/16/24	400	0
		12/17/24	357	0
		12/19/24	392	0

It has been repeatedly emphasized that there is no fixed level of blood sugar at which sugar appears in the urine, and it has been pointed out that this renal threshold varies in the same person from time to time. It has also been shown that the renal threshold in diabetes tends to be higher than in health. In the group of patients we have studied, however, the renal threshold seemed to be so abnormally high as to constitute an unusual condition. In the accompanying table a brief summary of the blood sugar findings in this group of patients is given. A specimen of urine was voided at the time the blood was withdrawn for the blood sugar determination, and this specimen as well as a mixed specimen of the twenty-four hour voiding were examined. All these patients except Patient 3 had moderately severe diabetes and required from 30 to 40 units of insulin daily. All except this patient were youthful, without any suspicion of arteriosclerosis, renal disease, or any similar factor that might account for the high renal threshold. While some of these figures shown in the table represent the high renal threshold occasionally found in diabetes, yet such blood sugar values as 425, 370, 333 or 338 mg. per hundred cubic centimeters are unusually high in the absence of any glycosuria.

On several occasions an attempt was made with Patients 1, 2, 5 and 6 to lower the blood sugar by increasing the dose of insulin, with the result that they had a mild insulin shock. In treating these patients, the high blood sugar values have been ignored and the diet and dosage of insulin have been based entirely on the urinary findings. Such management has proved satisfactory, although several of the patients worry when their blood sugar is elevated, though they have no sugar in the urine.

Two explanations of this condition suggest themselves. It is possible that in these patients there was an abnormally high renal threshold, this term being used in its present accepted sense. Another possibility is that through the action of the insulin the normal blood sugar is changed into some other substance not readily excreted, but which gives the same copper value as blood sugar. Further study of this question may be of interest and profit. We do not know whether this unusual finding occurs in the absence of insulin treatment in these patients since, with one exception, they have moderately severe diabetes and require insulin. The practical lesson we have learned from the study of these patients is that the estimations of the urinary sugar have been a safer guide to therapy in this group of patients than the blood sugar determinations.

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THE THYROID DURING PREGNANCY

CLINICAL OBSERVATIONS

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AND
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The high rate of incidence of thyroid enlargement during pregnancy is well known. The frequency with which changed psychologic reactions, such as increased irritability, nervousness and emotionalism, occur is also a matter of common knowledge. Little significance is ordinarily attached to either.

Not infrequently, however, associated with thyroid enlargement and increased nervous sensitivity we hear complaints of troublesome insomnia, headache and palpitation, and we find tachycardia and an increase in blood pressure. It is either the tachycardia or hypertension, or both, that directs our attention to the possibility that the complaints may not be simply the result of nervous instability.

During the last four years in the medical clinic of the Chicago Lying-In Hospital we have observed a considerable number of women who presented such symptoms and physical findings. At first we attributed the whole picture to the increased nervousness of the pregnant woman, but we noticed that only a few of them derived any benefit from ordinary doses of bromids, and that those with hypertension obtained relief only by greatly diminishing their physical activities. The condition was not persistent, however, and, as a rule, the symptoms subsided after a few weeks, even though not perceptibly influenced by therapy. The clinical picture so often gave the impression of hyper-

thyroidism that after a time we began to consider the possibility of its being due to some temporary thyroid derangement.

Our clinical observations on pregnant women have convinced us that even normal pregnancies may produce a state of physiologic overstrain closely bordering on the pathologic. Evidence of such functional overstrain is seen best perhaps in certain types of athletic women whose hearts, before pregnancy, are able to withstand the effort of strenuous exercise, but which, with the addition of the burden of pregnancy, show signs of myocardial insufficiency if such exercises are attempted. As a matter of fact, the treatment of heart disease in pregnancy is simply the relief of the additional strain of the pregnancy.

It has seemed plausible that evidence of other types of overstrain during pregnancy might be demonstrable if our diagnostic methods were more accurate. We believe that such functional disturbance may occur in the thyroid.

As many previous workers have shown, the thyroid gland, at the time of the menses, of puberty, and during pregnancy, shows signs of hyperplasia. Marine [1] has long been of the belief, and has shown experimentally in animals, that great variations in functional activity of the thyroid occur to meet the wide variations of metabolism, especially in the female; and that the conditions in which the thyroid activity is known to be increased, correspond, as regards time, to the periods in life when goiter develops. According to Marine, increased thyroid activity is associated with decreased iodin store in the gland, provided the intake of iodin at such times is not correspondingly increased; and that if the iodin store falls below 0.1 per cent., thyroid enlargement begins. It may also be recalled that Plummer [2] has more recently advocated the use of iodin in the treatment of certain types of hyperthyroidism.

The syndrome that we have observed indicated to us a state of increased activity of the thyroid due to excessive demands, which have diminished the iodin store to the point at which hyperplasia and increased activity result. Usual methods of treatment for increased nervousness were of no avail, so iodin medication was used on the assumption that if the clinical picture were the result of increased thyroid activity initiated by an insufficient iodin store in the gland, the administration of an excess of iodin would restore the content to normal and alleviate the symptoms.

REVIEW OF TWENTY-FIVE CASES

Seventeen patients presented a clinical picture of functional disturbance of the thyroid beginning about the middle of pregnancy. They complained of marked nervousness, irritability and emotionalism; of troublesome insomnia; of palpitation and ease of exhaustion. They presented the physical findings: enlarged thyroid, tachycardia, tremor, increased blood pressure, and in some instances one or more eye signs usually associated with hyperthyroidism.

Seven were primiparas; ten were multiparas; their ages ranged from 17 to 42 years.

In thirteen cases the symptoms began between the fourth and sixth months; in three they began before the third, and in one after the seventh month.

In all of these cases bromids, from 45 to 60 grains (3 to 4 gm.), were given daily for one week, no other medication being used. Only three obtained relief; fourteen were not favorably influenced.

Compound solution of iodin, from 3 to 5 drops three times a day, was then administered to the patients who obtained no relief from bromids. No other medication was used, and the patient's routine of life was not changed in any way. All were promptly relieved from their subjective symptoms, usually within seventy-two hours, the most striking result being the relief from insomnia. In all but one, the blood pressure returned to normal level; diminution in size of the thyroid was apparent in about 50 per cent.; the tremor and eye signs—when present—disappeared in all; the pulse rate decreased appreciably in only about one third of the cases, a fact for which we have no explanation. Two patients with persistent nausea and vomiting were completely relieved.

The plan adopted was to administer compound solution of iodin in courses of one week, with intervals of from one to two weeks between courses. Relief was obtained, as a rule, within one week; most of the patients, however, received two courses of iodin, and several required three weeks before the symptoms were permanently alleviated. One patient had a recurrence of symptoms during the lactation period and responded to a similar course of iodin.

The smaller group of eight patients presented the clinical picture of diseased thyroids; i. e., exophthalmic goiter. They gave histories of several years of symptoms occuring in recurrent cycles. Six had definite exophthalmos. Exacerbation of symptoms, in these, bore no relation to the duration of the pregnancy, occurring any time from the second month to term. In this group, iodin therapy gave relief from subjective symptoms and, in a measure, from objective signs, but the relief was not permanent, lasting for several weeks when a return of symptoms would necessitate another course of iodin. It was possible to carry them through their pregnancies safely and fairly comfortably. Since the completion of their pregnancy, several of these have had thyroidectomies performed.

These patients have been subjected to clinical observation only. Basal metabolism readings were not made in this series for two reasons: 1. Accurately to interpret basal metabolic readings in pregnancy is probably not at present a strictly clinical problem, since the most recent and careful work by Baer,[3] H. F. and H. K. Root,[4] and Sandiford [5] and others indicates that the increase in basal metabolism found in the later months of pregnancy is due, not to a true increase of maternal metabolism, but to increased protoplasmic mass of the fetus and in part of the mother. Therefore, occasional basal metabolic rate determinations without serial study of the individual case would not have added information of great value and might have obscured the fairly definite clinical picture evolved. 2. All the patients were ambulatory dispensary patients whose routine of life was in no way interfered with.

SUMMARY

Our observations have led us to believe that:

1. Pregnancy, by increasing the need for thyroid activity, makes excessive demands upon that gland, diminishes the store of iodin contained therein, and, unless the intake of iodin is sufficiently increased *may* produce a state of functional or physiologic overstrain

1. Marine, David: Importance of Our Knowledge of Physiology in Control of Thyroid Diseases, Arch. Int. Med. 32:811 (Dec.) 1923.
2. Plummer, H. S.: Results of Administering Iodin to Patients Having Exophthalmic Goiter, abstr., J. A. M. A. 80:1955 (June 30) 1923.
3. Baer, J. L.: Am. J. Obst. & Gynec. 2:249 (Sept.) 1921.
4. Root, H. F., and Root, H. K.: Basal Metabolism During Pregnancy and Puerperium, Arch. Int. Med. 32:411 (Sept.) 1923.
5. Sandiford, Irene: J. Biol. Chem. 60:329 (Dec.) 1924.

of the thyroid which presents a clinical picture of hyperthyroidism.

2. Administration of iodin will relieve this syndrome.

3. The possibility exists that in this functional disturbance we may have a basis for the very common nervous instability of the pregnant woman, and for some of the toxemias of pregnancy.

104 South Michigan Avenue.

SIGNIFICANCE OF A HEMOPTYSIC ONSET IN TUBERCULOSIS

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Those of us whose work lies in the field of diseases of the chest are often struck by the frequency with which pulmonary tuberculosis is ushered in by hemoptysis as the first symptom. This often occurs in patients who, up to the time of their hemorrhage, were apparently in perfect health. We are taught to regard and treat all such cases, when no other cause can be found for the bleeding, as tuberculous until proved otherwise. The figures given here show, I think, the wisdom of such teaching.

It is to be remembered, however, that in the group of cases with which this study deals, the diagnosis of tuberculosis had already been made by at least one physician, or else they would not have been sent to us for treatment. These cases are, therefore, not so apt to include the many patients seen in a general hospital who enter because of hemoptysis, and in whom nothing definite can ever be made out as to the cause of the bleeding. Those of us who had anything to do with examinations for tuberculosis in the army will recall how frequently we were able to obtain a history of blood spitting which, as far as the diagnosis was concerned, could not be substantiated by physical or, when possible, roentgen-ray findings. These unexplained hemoptyses are so frequent that I understand that in at least one of our largest New York hospitals, the diagnosis of simple "hemoptysis" has been allowed on the discharge record. For ourselves, however, we cannot but feel here that any person having an unaccountable hemoptysis of a dram or more should be carefully studied for other signs of tuberculosis, and should remain under close medical observation for a period of several months at least.

The following analysis is made from the consecutive records of patients who entered the Trudeau Sanatorium from January, 1911, to January, 1923, thus covering a period of twelve years. During this time, 2,845 patients were treated in the institution. Our present study deals with only those of the group who came under the heading of "hemoptysic onset," and in whom no history suggesting tuberculosis prior to this initial bleeding could be obtained. Of our 2,845 records examined, 245, or 8 per cent., fall in this group. The chief point of this study is to note in how many of these 245 cases there was found other definite evidence of tuberculosis. I will consider as definite evidence four points: sputum examination; roentgen-ray findings; râles, and pleurisy with effusion. It is, indeed, rather surprising to note that in only ten, or 4 per cent., of this series of 245 cases, do we fail to find one or more of these four points present.

During their stay in the sanatorium, we found the sputum to be positive in 119, or 48.57 per cent., of these cases, while tubercle bacilli had been found in the sputum of thirty more patients reported, before they entered the institution. Counting in these thirty cases, we find a record of 149, or 60.81 per cent., of our 245 cases with positive sputum.

In speaking of positive roentgen-ray findings, I have reference here to definite parenchymatous involvement, and not to the peritruncal type, which is often not definite enough to warrant a diagnosis. In 171, or 69.83 per cent., of this series of hemoptysic onset cases, a confirmatory diagnosis was made in the roentgen-ray laboratory. These plates were all read by our roentgenographer without previous knowledge of either the history or the physical findings.

In considering râles I mean those, usually moderately coarse in character, situated in the upper half of either chest, and not clearing after cough. We found these râles present in 196, or 80 per cent., of the cases of this series. I cannot but feel that the 10 per cent. higher incidence of positive râles over positive roentgen-ray findings was due to the fact that, although our roentgen-ray department was opened early in 1912, we did not include the roentgenographic chest plate as part of the routine examination of every patient until April, 1915.

Ten, or 4.08 per cent., of our 245 cases had had at some time, or developed while with us, a pleurisy with effusion which could not be explained by any cause other than tuberculosis.

As stated previously, ten, or 4.08 per cent., of our 245 patients failed to show positive sputum, râles or positive roentgen-ray findings, or ever had wet pleurisy. In looking up the records of these ten cases, I find that one patient has been lost track of, and the other nine are all reported as well and working.

Now, as to the prognosis in these types of cases: In following these 245 patients from one to twelve years after leaving the sanatorium and classifying them under the headings of "well," meaning well and working for at least two years, "living," meaning either that they are still continuing their treatment or else that we can find nothing more about them other than the fact that they are still living, "dead," and "unknown," we have the results given in Table 1.

For the sake of comparison and to bring out more clearly the significance of this mode of onset as regards prognosis, I quote one table (Table 2) from a former study of 980 consecutive admissions to the Trudeau

Table 1.—*Condition of Patients from One to Twelve Years After Leaving Sanatorium*

Well		Living		Dead		Unknown	
No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
114	46.53	63	25.72	47	14.18	21	8.57

Table 2.—*Type of Onset in Prognosis*

			Well		Living		Dead		Unk'n	
Type	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Catarrhal	473	48.25	289	61	70	15	110	28	4	1
Insidious, gradual	350	35.73	237	68	38	11	70	20	5	1
Pleuritic	72	7.34	42	58	14	19	15	21	1	2
Hemoptysic	50	5.1	33	66	5	10	12	24	..	..
Febrile	15	1.53	9	60	2	13	4	27	..	..
Gastric, dyspeptic, indigestion	8	0.82	7	88	..	..	..	..	1	12
Glandular	5	0.51	3	60	1	20	1	20	..	..
Family History tuberculin	3	0.3	1	33	1	33	1	33	..	..
Fistula in ano	2	0.2	2	100	..	..	..	..	..	..
Pneumonia	2	0.2	1	50	..	..	1	50	..	..
	980	100	624		131		214		11	

Sanatorium, followed from five to eleven years after discharge.[1] As will be seen, this table deals simply with the various types of onset of tuberculosis, as regards prognosis.

From Table 2 we note that tuberculosis first manifested itself by bleeding in 5.1 per cent. of these 980 cases (8 per cent. of our present series of 2,845 cases), and that it was the fourth in frequency among the other types of onset; the main point being, to quote from the former article, "the way the disease began plays little or no part in determining its future course."

CONCLUSIONS

In a study of 245 patients entering the Trudeau Sanatorium between the years 1911 to 1922, and having hemoptysis as the first symptom, we find:

1. Only ten, or 4 per cent., failed to show other evidence of tuberculosis.
2. One hundred and forty-nine, or 60.81 per cent., had a positive sputum, either while in the sanatorium or prior to entrance.
3. One hundred and seventy-one, or 69.83 per cent., had definite parenchymatous roentgen-ray findings.
4. In 196, or 80 per cent., persistent rales were heard in the upper portion of the chest.
5. Ten, or 4.08 per cent., had had at some time pleurisy with effusion, or developed this condition while in the institution.
6. The prognosis in this type of case is no better or worse than in any other mode of onset of this disease.

105 Main Street.

AN INSTITUTIONAL OUTBREAK OF SCARLET FEVER

THE SKIN TEST FOR SUSCEPTIBILITY *

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Institutional scarlet fever is frequently a condition of serious import. Starting with one or two sporadic cases, the outbreak may rapidly assume epidemic proportions. More important even than this is the fact that the virulence of the infection may vary from quite mild to rapidly fatal cases during the same epidemic. On account of these facts, any method by which the susceptible children may be differentiated from the immune ones is of inestimable value. Knowing which persons are susceptible, a close watch may be kept on them, and at the faintest suspicion of trouble, isolation may be put into effect, thereby checking the development of new cases. The skin test for susceptibility, as evolved by the Dicks,[1] offers a quick and easily applicable method for separation of susceptible from immune persons, the percentage of error being, apparently, so small that it offers no real obstacle.

THE EPIDEMIC

Jan. 12, 1925, a case of scarlet fever developed at the Virginia School for the Deaf and Blind at Staunton, Va.[2] Another case developed, January 20, and by February 1 there were nine cases. The next case developed, February 10, and skin tests for susceptibility to scarlet fever were started. All contacts, either in the class rooms or in the dormitories, were tested as new cases developed. Those contacts showing positive tests were required to come to the dispensary daily for inspection of their throats and determination of their temperatures. All children showing any elevation of temperature or congestion of the pharynx were sent immediately to the infirmary, and kept under observation. Six new cases developed after the adoption of these measures, the last one, March 1, making a total of sixteen cases in an institution of 300 inmates. This outbreak was very mild in character, the symptoms being slight sore throat and malaise. The temperatures did not exceed 100 F. except in two cases in which the temperature reached 102 F., and the febrile period lasted only two or three days. Desquamation was slight, though definite, and there were no kidney complications. On account of the mildness of the epidemic, it was not thought advisable to use the scarlatinal antistreptococcus serum.

INTRACUTANEOUS TESTS

The toxin used for the skin tests was obtained from the strain of *Streptococcus scarlatinae* used by Dochez in the preparation of immune serum.[3] This toxin was prepared by culture of *Streptococcus scarlatinae* in beef broth for four days. The culture was then passed through a Berkefeld V filter, and the filtrate diluted 1:500 with physiologic sodium chlorid solution. The control was prepared by heating some of the toxin, prepared as outlined above, for two hours in a boiling water bath. The toxin and control were injected into the skin of the anterior surface of the forearms, a tuberculin syringe graduated in 0.01 c.c. and small hypodermic needles being used; 0.05 c.c. of the material was employed, and the technic of making the Schick test was followed. The reactions were observed twenty-four hours later, and the results recorded according to the Dicks' classification, "slightly positive" reactions representing faint red areas less than 2 cm. in diameter, without swelling of the skin or tenderness; "positive" reactions representing bright red areas from 1.5 to 3 cm. in diameter, with swelling of the skin and occasionally slight tenderness, and "strongly positive" reactions, shown by intensely red areas more than 3 cm. in diameter, with marked swelling of the skin and usually some tenderness. Pseudoreactions, not mentioned by the Dicks, occurred, and were recorded according to Zingher's[4] classification; viz., "pseudonegative" reactions, in which the areas of redness on the two arms, representing toxin and control, were of equal size, and "positive-combined" reactions, in which the areas of redness on the left forearm, containing the toxin, were larger than the areas on the right forearm containing the control. The results of the skin tests on scarlet fever patients are shown in Table 1.

It will be seen from this table that scarlet fever developed in one negative case, and that another case, which appeared negative on the second day of the disease, would undoubtedly have been negative if tested before the rash appeared, as immunity is not established that early in the disease. The fact that clinical scarlet fever developed in two negative cases was most interesting, and showed that the toxin used by us was not

1. Trudeau, F. B.: Influence of Various Symptoms in the Prognosis of Pulmonary Tuberculosis, J. A. M. A. 80:831 (March 24) 1923.

* Read before the Medical Association of the Valley of Virginia, June 4, 1925, at Clifton Forge, Va.

1. Dick, G. F., and Dick, Gladys H.: A Skin Test for Susceptibility to Scarlet Fever, J. A. M. A. 82:265 (Jan. 26) 1924.

2. The clinical material for this study was furnished by Dr. Kenneth Bradford, the physician for the Virginia School for the Deaf and Blind, Staunton, Va.

3. We are indebted to the bacteriologic department of the Presbyterian Hospital of New York for furnishing the material used in the tests.

4. Zingher, Abraham: The Dick Test in Normal Persons and in Acute and Convalescent Cases of Scarlet Fever, J. A. M. A. 83:432 (Aug. 9) 1924.

specific for all cases. All convalescent cases finally became negative, though one gave a positive reaction on the first retest, a pseudonegative reaction on the second retest, and a negative reaction on the third retest. Three cases showed pseudonegative reactions on the first retest, becoming negative on the second retest.

Results of skin tests from the other contacts are shown in Table 2.

The information obtained in these cases was so unreliable that we did not attempt to classify them in regard to the history of having had scarlet fever. It will be seen from this table that the percentage of negatives was high, but no higher than one would expect among

TABLE 1.—*Results of Skin Tests in Scarlet Fever Cases*

Time of Test	Number	First Test	Second Test	Third Test	Fourth Test	
During convalescence	10	6 Negative 3 Pseudonegative 1 Slightly positive	3 Negative 1 Pseudonegative	1 Negative		
During the exanthem	3	1 Negative (second day) 2 Slightly positive	2 Negative			
Before the exanthem	3	1 Pseudonegative, Feb. 10 2 Slightly positive	1 Pseudonegative, Feb. 15	1 Negative, Feb. 18	1 Negative, Feb. 23	Developed scarlet fever, Feb. 25

TABLE 2.—*Results of Skin Tests on Other Contacts*

Number Tested	Negative	Positive	Positive-Combined	Pseudonegative	Pseudo Retests
56	48	1	4	7	3 Neg. 2 Pos.-Combined 3 Pseudoneg.

children in a state institution. Of the seventeen positive reactions, nine were slightly positive, seven positive, and one strongly positive. In eight pseudoreactions, retests were made and tabulated as follows: three negative, two positive-combined, and three pseudonegative.

PSEUDOREACTIONS

Zingher [4] has brought out the fact that pseudoreactions occur in the application of the Dick test just as they occur with the Schick test, and has suggested that it may be an allergic phenomenon due to hypersensitiveness to the protein of the hemolytic streptococcus or to other proteins contained in the test material. This author has stated that the pseudonegative reactors have antitoxic properties in their blood serum as found in the case of negative reactors, and are immune to scarlet fever. The positive-combined reactors, on the other hand, have no antitoxic properties in their blood serum, and are susceptible to scarlet fever.

It has been our experience that the pseudonegative reactions have not been constant, as has been best shown in the case of some convalescents who have given first a pseudonegative reaction, and, a few days later, have given a negative reaction. We feel that those persons showing pseudonegative reactions should be retested before final tabulation of results.

SUMMARY

In an institutional outbreak of scarlet fever, the skin test for susceptibility was made on all patients with scarlet fever and on all contacts.

The skin test was negative in one case of scarlet fever on the second day of the exanthem, and negative in another child who developed the disease two days later.

All cases of scarlet fever became negative during convalescence.

Of the contacts tested, forty-nine showed negative reactions, nineteen positive, and seven pseudonegative reactions.

Pseudoreactions were noted when testing for susceptibility in cases of scarlet fever and in normal persons.

CONCLUSIONS

1. The use of the skin test for susceptibility to scarlet fever is of value in the management of an institutional outbreak.
2. Negative reactors occasionally develop scarlet fever.
3. The immunity resulting from an attack of scarlet fever usually renders the skin test negative.
4. Pseudonegative reactors should be retested before final tabulation of results.

Professional Building.

SOME EXPERIENCES WITH GAS INSUFFLATION OF THE FALLOPIAN TUBES

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In the dispensary of the New York Post-Graduate Hospital, service of Dr. H. D. Furniss, we had, from April, 1921, to April, 1925, more than 5,000 new patients, about nine tenths of whom were married. Less than 600 of these women had been married one year or more, and had never conceived, but only 199 consulted us directly or indirectly because of sterility. There were, further, twenty-one patients who had had one or two children or miscarriages dating back from five to sixteen years and who now wanted to become pregnant again.

On ninety-four of these 220 patients, 115 carbon dioxid insufflations of the tubes (Rubin tests) were made, up to four on the same patient, with the result that twenty-nine women were found to have closed tubes and sixty-five open tubes. This may seem a very small number of gas insufflations of the tubes in view of the large material we had at our disposal. However, some of the women did not return for further examinations, some had acute or subacute pelvic inflammation or purulent discharges, and some refused a Rubin test. Again, we did not use a carbon dioxid insufflation of the tubes as a diagnostic measure per se except to determine the patency of the tubes, and even then, with very few exceptions, only after it had been shown that the husband's semen was normal or contained at least some motile spermatozoa. We adopted this rule of examining first of all at least a condom specimen of the husband's semen, frequently also making a compatibility test, because it was a perfectly safe and harmless procedure, whereas a Rubin test is always unpleasant for the patient and sometimes quite painful.

We ourselves never had any untoward results with a gas insufflation of the fallopian tubes; at the same time, some morbidity and mortality has been reported

in the literature,[1] so that we did not feel justified in making a Rubin test in any case in which the husband's fertility was in doubt or shown to be lacking. The condition of the tubes of the wife is, of course, of no importance whatever from a standpoint of conceiving, unless the husband is fertile. The only cases in which we ourselves did not examine the semen were cases directly referred only for insufflation of the tubes, among them fifteen cases sent by other clinics in the hospital, with eight negative and seven positive results.

Altogether, then, our records show carbon dioxid insufflations on 109 patients, with thirty-seven negative and seventy-two positive results. In some of these cases, more than one test was made, so that the number of tests (132) is in excess of the number of patients. We also made 108 semen examinations. Of these, ninety showed normal spermatozoa in fair or large numbers; nine few spermatozoa, and nine none at all. On these last nine cases, no carbon dioxid insufflation of the tubes was made.

TECHNIC

We used a regular carbon dioxid gas tank with a low pressure gage reducing valve, as suggested by Dr. Furniss, a Tycos sphygmomanometer, which has the advantage that it will not scatter mercury if the pressure should rise inadvertently, a Rubin jar and a Keyes-Ultzman cannula, with less of a curve than the regular instillator, and several openings in and around the tip.

The advantage of the reducing valve on the gas tank is that one can set the apparatus to a definite maximum pressure which cannot be exceeded. Thus, any danger from excess pressure is avoided, and the apparatus, when not in use, can be left set and closed, so that a number of cases can be treated without gas escaping except at the time of a test. We also learned from experience that the cannula itself should be tested for patency before each insufflation, as at times this tube becomes plugged with mucus if it is boiled without proper preliminary cleansing with cold water.

Generally we allowed between 120 and 160 c.c. of gas to flow into the abdomen. This is sufficient to give the typical phrenic irritation expressed by shoulder pains when the patient sits up, and, at the same time, is so small an amount that in from fifteen to thirty minutes the woman will be free from pain, as the carbon dioxid is absorbed very rapidly. At first we used the fluoroscope to corroborate our findings, but soon dispensed with it, depending on a perfect condition of our apparatus, the flow of gas, the sphygmomanometer readings and the shoulder pains, which were always present when the gas entered the abdomen. If the tubes seemed to be open, but no shoulder pains developed, the test was repeated. In doubtful cases in which we thought a leak between instillator and cervix possible, the vagina was filled with boric acid solution or sterile water to cover the cervix, so that the escape of gas could be seen if present. Generally, this was not necessary, as a leak could be heard because of the mucus in the cervix. The cervix was always swabbed out, painted with iodin and steadied with a tenaculum; then the instillator, with gas flowing freely and the pressure at zero, was introduced and the sphygmomanometer and the flow of gas watched. In cases in which there were closed fallopian tubes, the pressure would rise steadily until the set maximum was reached or a leak took place. When the maximum was reached, the gas stopped flowing. This is a very important point which I do not find stressed at all in the publications on this subject. If the maximum pressure is reached, it does not mean closed tubes unless the gas stops flowing at the same time, a leak in the apparatus, of course, being excluded. When the tubes were open, the carbon dioxid kept on flowing, and the sphygmomanometer would usually show a drop from the pressure first reached, although this was not invariably so, but the gas always kept on flowing. In a number of cases, we controlled the entrance of the gas into the abdomen with a stethoscope, and often the gas could be heard escaping, usually only on one side. I do not believe that this audible control is of much importance, however, because gas will seek the easiest way out; and if one tube should be temporarily kinked or only slightly less patent than the other, perhaps, as has been stated, from pressure on it by the uterus as a result of the patient's position, the gas will escape only on that side. At the same time, the other tube may be functionally perfectly normal.

RATE OF FLOW OF THE CARBON DIOXID

Rubin[2] used a rate of flow that would produce a pressure of 100 mm. of mercury in twenty seconds. Others have used the same slow rate. The advantage of using a uniform rate of flow for all cases, of course, is that it makes comparative results possible. Aside from this, however, it was claimed that if the rate of flow of the carbon dioxid is much faster than that mentioned above, the gas may not flow through open tubes, as a result of kinking induced by the rapidly rising pressure. This fact we could not corroborate. We generally had the gas flowing at the rate of four pulsations to the minute, finding this a sufficiently accurate means of timing, provided the apparatus was really air tight; but in many of our cases we also used a more rapid flow of gas, repeating the test without much difference in the end-results. In some cases, we repeated the test with a varying rate of flow of the gas, two, three and four times on the same patient at one sitting. (These repetitions are simply counted as one test on our list.) We found little difference in the pressure readings in freely patent tubes, although partially occluded tubes might show a higher primary pressure, but following it usually a correspondingly greater secondary drop. As a result, we paid a good deal of attention to the secondary drop, as tubes temporarily kinked or pressed on by the uterus might appear to be partially occluded, if the primary pressure alone was considered. In no case did a tube appear closed with a faster rate of flow and open with a slower one. I believe, however, that such a discrepancy of findings could occur with an apparatus not properly set for a definite maximum, if only the primary pressure and not the continued flow of the gas is watched. At any rate, it does not seem to me that the pressure at which the gas enters the abdomen through the tubes makes much difference. The sole point of importance seems to be whether or not the gas passes through the tubes at all. One of our women who showed a primary pressure of 240 mm. of mercury, and no secondary drop, but definite shoulder pains, later became pregnant. After that, therefore, we often employed a rather rapid flow of gas in nervous and sensitive patients, as it shortened the whole ordeal considerably.

1. Larey: München. med. Wchnschr. **69**: 3, 1922. Sellheim, H.: Zentralbl. f. Gynäk. **48**: 605 (March 15) 1924.

2. Rubin, I. C.: Nonoperative Determination of Patency of Fallopian Tubes, J. A. M. A. **75**: 661 (Sept. 4) 1920; Am. J. Roentgenol. **8**: 139 (March), 459 (Aug.) 1921; Most Favorable Time for Transuterine Insufflation to Test Tubal Patency, J. A. M. A. **84**: 486 (Feb. 14) 1925.

COMMENT

Many forms of apparatus have been devised much simpler than the one used by us, but they generally employ a hand syringe and air. Because of this, they cannot be set as a valve regulated apparatus can, which is a disadvantage. Also in employing air, that is, oxygen and nitrogen, absorption in the peritoneal cavity is much slower, and as a result the discomfort to the patient greater. Of course, very small amounts of air may be used, from 30 to 40 c.c., just enough to see whether the gas will flow through the tubes; but then the valuable corroborative evidence of shoulder pain is sacrificed, and we cannot be sure that the apparatus might not have leaked.

We performed the insufflation of the tubes generally in the first half of the intermenstrual period, sometimes later. Some cases showed a lower pressure shortly after menstruation than shortly before, but this was not always so. If the tubes were closed, or if they were only moderately patent and the pressure employed high, at times abdominal pains, apparently uterine cramps, developed.

We never used the Rubin test with patients suffering from general diseases, acute or subacute pelvic inflammations or purulent discharges, or when an abnormal temperature was present. Pregnant and menstruating women were, of course, also excluded; likewise, all women whose husbands had not been shown to be fertile.

The accompanying table shows the clinical diagnoses and the results of the Rubin tests in the ninety-four cases from our own service.

Clinical Diagnoses, and Results of Rubin Tests

Clinical Diagnosis	Number of Cases	Open, Number of Cases	Closed, Number of Cases
Normal	23	17	6
Ovarian dysfunction	6	6	0
Infantile uterus	12	9	3
Superinvoluted uterus	1	0	1
Fibromyoma uteri	2	1	1
Adherent retroversion	3	2	1
Chronic cervicitis	30	20	10
Cervical polyp	1	1	0
Chronic salpingitis	27	6	21
Perimetritis and parametritis	7	4	3
Ovarian cyst and cystic ovaries	2	2	0

The prominent conditions present in the patients are listed here, so that the number of clinical diagnoses does not agree with the actual number of cases, as some patients had more than one pathologic finding. The primary pressure and secondary pressure drop in each case is not listed, as our experience with the woman mentioned before, who became pregnant despite the fact that the gas flowed into the abdomen at a pressure of 240 mm. of mercury without any secondary drop, showed us clearly that apparent partial occlusion of the tubes does not necessarily exclude normal physiologic function.

In most of our cases, but by no means in all, the clinical diagnoses were in fair accord with the results of the Rubin test. In seventeen of our twenty-three apparently normal cases the tubes were open, and in twenty-one out of twenty-seven cases diagnosed as salpingitis, the tubes were closed. Clinically, salpingitis was responsible for between 45 and 46 per cent. of the closed tubes. An interesting feature of our list of cases is the number of women with chronic cervical infections, who were sterile, but had open tubes. It shows the importance of the cervix as regards the possible occurrence of pregnancy. Why some of the normal women with patent tubes and good compatibility results did not become pregnant, we do not know. There are still many other factors involved in sterility about which little or nothing is known. The possibility of diet, as shown in animal experiments, the much argued question of sperm intoxication and other factors, probably, must be considered here, as it is not unlikely that they played an unrecognized rôle in some of these cases.

As stated before, no case showed closed tubes and later open tubes, but one case showed open tubes at the first test, and later closed tubes. I do not know but that possibly the Rubin test caused an exacerbation of the chronic salpingitis present, although clinically no symptoms pointed to such an occurrence. This patient at the first trial showed a primary pressure of 180 mm. of mercury with a secondary drop of 20 and characteristic shoulder pains, and on the second and third trials, closed tubes with a maximum pressure of 220 and 240. Generally the later Rubin tests made on the same patient would give lower pressures than the earlier ones. One woman, for instance, had four tests which showed primary and secondary pressures of 220 and 180, 170 and 120, 150 and 100, and 130 and 90. Another came down from 200 and 140 to 160 and 140. The highest pressure in any case in which the tubes were still patent was 240, with no secondary drop but typical shoulder pains. The lowest pressure necessary to force the gas through the tubes was 50, with a drop to 40 mm. of mercury. As it happened, this case with the lowest pressure was one of those we tried with a very rapid flow of gas, 100 mm. of mercury pressure in four seconds, in order to see what would happen with a greatly increased rate of gas flow. A slower rate tried on this patient afterward gave identical results.

One of the cases of salpingitis with closed tubes, at operation later, showed tuberculosis in the fallopian tubes, with a typical salpingitis isthmica nodosa.

Of the ninety-four patients from our own service, who were the only ones we were able to follow up, eighty-eight underwent insufflation more than three months ago; of these eighty-eight, thirty-three had closed tubes and fifty-five open tubes, and of the latter, seven later became pregnant, to our knowledge. Not a single instance of pregnancy occurred in those patients who, according to our tests, had closed tubes. A summary of the seven cases in which the women became pregnant follows.

REPORT OF CASES

Case 1.—A woman, aged 30, married eleven years, had had three miscarriages from eight to ten years before. The gynecologic examination was negative. The husband's semen was normal. The Rubin test showed a primary pressure of 60 mm. of mercury, which sank to 40. The patient became pregnant three months after the Rubin test.

Case 2.—A woman, aged 23, married one year, had not been pregnant. The gynecologic examination showed moderate hypoplasia of the uterus, chronic cervicitis and posterior parametritis. The husband's semen was normal. The Rubin test, with a pressure maximum of 220, showed apparently closed tubes. Repetition of the test four weeks later, under the same conditions, with a maximum pressure of 240 mm. of mercury, showed a flow of gas, but without a secondary drop, and with typical shoulder pains when the patient sat up. A third test, later, gave the same results. The patient conceived eight months later, after the cervix had been cleared up with passive hyperemia treatment. Possibly this patient had, together with her hypoplastic uterus, infantile convoluted tubes,

which have been shown in some cases to be impermeable, or almost so. There is also a possibility that the favorable outcome of the case may have been influenced by the passive hyperemia treatment to the cervix, which may have helped to develop the uterus, although bimanually no change was appreciable.

CASE 3.—A woman, aged 21, married one and a half years, had not been pregnant. The patient had recently gained in weight and was at the time very stout. The gynecologic examination showed a rather small uterus. The husband's semen was normal. The Rubin test, done twice, showed a primary pressure of 140, dropping to 120, and later a pressure of 85, dropping to 60. Endocrine therapy (ovarian and thyroid extract) was given; the patient lost considerable weight and became pregnant one year later.

CASE 4.—A woman, aged 25, married five years, had never been pregnant. The gynecologic examination showed an infantile uterus and right sided salpingitis. The husband's semen was normal. The Rubin test, done twice, showed a primary pressure of 130, dropping to 90, and later a primary pressure of 120, dropping to 75. Three months later, the patient was one month overdue, having always menstruated regularly before that. Shortly after that, she had bleeding and passed clots; later, she menstruated regularly again. Apparently, the patient had an abortion.

CASE 5.—A woman, aged 29, married nine years, had never been pregnant. The gynecologic examination showed marked cervicitis and slight parametritis. The husband's semen was normal. The Rubin test showed a primary pressure of 120, dropping to 82. The patient conceived five months later, after the cervix had been treated by means of passive hyperemia.

CASE 6.—A woman, aged 32, married five years, had never been pregnant. The gynecologic examination showed a mild salpingitis, and a slightly enlarged low left ovary. The husband's semen was normal. The Rubin test showed a primary pressure of 130, dropping to 90. Six months later, the patient was apparently from five to six weeks pregnant, but, as she did not return, the case is not absolutely proved.

CASE 7.—A woman, aged 34, married thirteen years, had never been pregnant. The gynecologic examination showed bilateral chronic salpingitis. The husband's semen was normal. The Rubin test gave a primary pressure of 220, dropping to 180. The patient became pregnant three months later, by artificial insemination.

Of these, Cases 4 and 6 are perhaps doubtful. In Cases 2 and 5, it is a question as to how much the clearing up of the cervical condition had to do with the pregnancy. Patient 7 became pregnant after artificial insemination. Patients 2 and 3 were married only one and one and one-half years, respectively, so that they might have conceived anyway. In Case 3, the endocrine therapy and loss of weight of the patient may also have had influence.

CONCLUSIONS

1. The carbon dioxid insufflation of the fallopian tubes is a valuable and safe test when properly carried out. At the same time, morbidities and mortalities have occurred, so that the test should be used only when indicated, aside from the fact that the patient should not be subjected to an always unpleasant procedure without good reasons.

2. The rate of flow of the carbon dioxid is apparently not as important as has been heretofore believed, but comparative results are, of course, possible only if the tests are all done under the same conditions. Variations in the pressure at which the gas flows into the abdomen are not to be taken as indicative of the comparative functional ability of the tubes. Tubes requiring even very high pressures to force the gas through them may still function normally, and operations are not indicated. This is proved conclusively by the fact that the two patients with the highest pressures (tubes patent at 240 and 220 mm. of mercury) were among the few that later became pregnant.

3. Whether or not the gas has actually entered the abdomen can be determined by the sphygmomanometer reading, the continuance or stoppage of the flow of carbon dioxid, and the shoulder pains; also the stethoscope, if desired. Fluoroscopic examinations are not essential and make the test cumbersome.

4. The therapeutic value of the Rubin test is small, but real beyond a doubt, as shown by the fact that the tubes, after several carbon dioxid insufflations, often become more patent than before.

5. The condition of the cervix undoubtedly plays a large rôle in sterility.

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TWO DEATHS FROM THE ADMINISTRATION OF BARIUM SALTS*

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Poisoning by barium salts is comparatively rare, in view of the large number of barium meals given for fluoroscopic or roentgen-ray studies, and the frequent occurrence in the arts. Barium chlorid is used in the staining of wool, the nitrate and the chlorate in the green fires of the pyrotechnist, the carbonate and oxid in the manufacture of glass, and the carbonate as a rat poison. The sulphate is used as an adulterant of white powder and in white paints. The sulphid under various names is used as a depilatory. Most of the barium intoxications noted in the literature were due to mistakes or impurities in medicinal formulas, or carelessness in the labeling of the chemicals and compounding.

Barium is found in the Harrogate to the extent of about three to six parts per hundred thousand. The poisonous character of the soluble barium salts was early recognized by James Watt, who found that witherite (barium carbonate), given to dogs, produced vomiting, diarrhea and death. One of the first instances of poisoning recorded in the literature occurred in 1808, when a man died six and one-half hours after taking the nitrate by mistake. Witthaus and Becker report thirty cases of poisoning, with twenty deaths; of these poisonings, fourteen were by the chlorid, ten by the carbonate, four by the nitrate, and two by the acetate. Twenty-two were accidental, three were suicides, one was taken to produce abortion, and in the other three the motive was not stated. Schuchardt reported a death by 3 gm. of barium chlorid, which was not included in the number reported by Witthaus and Becker. In a review of the literature from 1910, twelve deaths from barium carbonate, six deaths from barium chlorid and four deaths from barium sulphid poisoning were found, to which should be added the following barium sulphid and barium carbonate deaths reported by me:

CASE 1.—M. P., a Filipino, aged 29, took 4 ounces of barium carbonate in a pint of milk. The physician had prescribed barium carbonate in place of barium sulphate. The error was not detected by the pharmacist. Vomiting occurred in a few minutes. The patient was removed to a hospital. The rate of respiration was 30; the pulse, 106. A leukocyte count of

* From the Department of Materia Medica and Toxicology, Rush Medical College.
* A complete bibliography will appear in the reprints, a copy of which may be obtained from the author.

32,400 was obtained. The patient complained of severe abdominal pain, and vomited yellow mucoid material. Diarrhea was present. The patient grew progressively weaker, developing a difficulty in enunciation of words and a paresis of the arms. He died at 3:45 p. m., eight and three-quarter hours after ingesting the poison. As the cause of the acute illness was not apparent, antidotes were not given for barium.

The postmortem did not disclose evidence of corrosion of the mouth. The heart presented a marked parenchymatous degeneration of its myocardium. The lungs were acutely edematous. The liver, spleen and kidneys presented a parenchymatous degeneration. The pancreas, suprarenals and urinary bladder were without gross changes of note. The gastric mucosa was somewhat hyperemic, with numerous petechiae. The stomach contained a small amount of bile-stained fluid with no characteristic odor. The intestinal mucosa presented no gross changes of note. A chemical examination gave 0.2919 gm. (calculated as barium carbonate) in 139 gm. of stomach, and 0.0219 gm. (calculated as barium carbonate) in 398 gm. of bowel. A box containing a small amount of white powder, said to have been a portion of that taken by the deceased, was examined and found to be barium carbonate.

Case 2.—Mrs. C. F. B., aged 51, took a portion of a mixture containing 4 ounces of barium sulphid in a pint of buttermilk, at 4 a. m. The buttermilk burned and nauseated her so much that she was able to drink only half of the mixture. When seen by a physician at 4:30 a. m., she was vomiting and in great pain. Her pulse was rapid and weak. The vomited material had the odor of rotten eggs. The pulse gradually became weaker, death occurring at 7 a. m., three hours after taking the barium sulphid.

A postmortem examination did not show marks or evidence of external injury or violence. The brain was congested and edematous. When the thoracic and abdominal cavities were opened, the odor of hydrogen sulphid was marked. The lungs, liver, kidneys and spleen showed a passive congestion. The heart showed some myocardial changes. The bowel and stomach were distended with gas. The upper portion of the small intestine was of a blackish discoloration. A chemical examination of the organs disclosed the presence of barium and sulphids. A small amount of powder, said to be a portion of that taken by the deceased, was examined and found to be barium sulphid, dispensed in error by the pharmacist for the harmless barium sulphate. The amounts of barium found in the organs, calculated as barium sulphid, are given in Table 1.

Table 1.—*Barium, Calculated as Barium Sulphid, in Case 2*

Organ	Gm. per 100 Gm. Tissue	Gm. in Total Specimen Received
Bowel (large)	0.0383	0.0283 in 74 gm.
Bowel (small)	0.0320	0.0602 in 188 gm.
Brain	0.0030	0.0109 in 358 gm.
Cecum	0.0168	0.0082 in 48 gm.
Diaphragm	0.0117	0.0112 in 96 gm.
Heart	0.0023	0.0077 in 335 gm.
Kidney (left)	0.0152	0.0208 in 137 gm.
Kidney (right)	0.0135	0.0185 in 137 gm.
Liver	0.0152	0.1266 in 833 gm.
Lung	0.0037	0.0334 in 902 gm.
Pancreas	0.0131	0.0118 in 90 gm.
Spleen	0.0440	0.0054 in 135 gm.
Stomach	0.7976	1.8983 in 238 gm.

SYMPTOMATOLOGY

Barium poisoning manifests itself by great weakness, salivation and nausea. Vomiting and diarrhea follow. The purging is very violent, and causes severe abdominal pains. At this stage, usually, the victim becomes very cold. There is a catarrhal affection of the conjunctiva, the mucous membrane of the respiratory tract and the nose. Paralysis of the extremities and finally of the trunk are succeeding developments. The muscles of speech become very weak early in the poisoning, and swallowing very difficult. Consciousness always remains to the end.

Treatment usually consists of ingestion of magnesium or sodium sulphate, stomach lavage, hot bags around the abdomen and spine, stimulation with aromatic spirit of ammonia, and strychnin injection.

THERAPEUTICS

All barium salts with the exception of the sulphate are toxic in large quantities. However, when given in proper doses they exert a marked stimulating action on all muscular tissue, and a gradual but sustained rise in blood pressure. A depression may occur, depending on the condition of the organs, and also on the presence of other substances. The elimination of barium takes place mainly through the bowels. Barium chlorid has been used medicinally in place of digitalis, with good results, but the irritation of the former on the bowels makes its application very limited.

LETHAL DOSE

Riley states that 3.8 gm. is the smallest fatal dose of the chlorid, although larger doses have been taken without ill effect when prompt treatment followed. Schuchardt had a case in which 3 gm. caused death.

Table 2.—*Barium Chlorid in Viscera*

Organ	Weight Gm.	Barium Chlorid Free Anhydrous	Barium Sulphate Trans.	Calculated to Barium Chlorid
Stomach contents	38	0	Trace	Trace
Intestinal contents	25	0	0.019	0.020
Liver	670	0.126	0.088	0.091
Kidney	132	0.050	0.028	0.029
Spleen	58	Trace	0.003	0.003
Lung	335	0.070	0.021	0.022
Brain	500	0	0	0
Blood	15	0.003	0.003	0.003
Total	1,773	0.249		0.168

Kobert believes that, under certain conditions, 2 gm. would be fatal. The toxic dose he believes to be 0.2 gm., and when larger amounts are tolerated it is chiefly due to the ingestion of a sulphate-rich food which renders some of the barium insoluble. Twenty grams of barium chlorid taken by mistake for magnesium sulphate caused death in five and one-half hours. A chemical analysis of the viscera gave the data in Table 2.

Thus, in 1,773 gm. of the organs there was an equivalent of 0.417 gm. of the anhydrous barium chlorid. Stern reports that 8.6 gm. of the chlorid caused death in nine hours. A man recovered from 6.5 gm. of the chlorid taken on a full stomach. Aloy and Saloz report two cases of death within ten hours from 30 gm. of barium chlorid taken in place of barium sulphate. Krafft gives the lethal dose of barium chlorid as 0.09 gm. per kilogram of body weight when taken by mouth.

Intravenous injection of 0.04 gm. in full grown cats of from 3 to 5 kg. killed all in from one to thirty minutes. A dog of 7.8 kg. weight died in twenty-two minutes after the injection of 0.21 gm., given in seven divided doses. Aloy and Cournet determined the minimal lethal dose of this salt to be from 0.01 to 0.015 gm. per kilogram of body weight by injection and 0.09 gm. per kilogram by ingestion. The longest duration of poisoning with death is that reported by Lewin of a person dying in three days from the ingestion of 10 gm. of barium chlorid.

Although barium carbonate is insoluble, the hydrochloric acid of the gastric juice changes it to the soluble toxic chlorid. From 80 to 100 gm. of barium carbonate taken in a roentgen-ray examination, substituted by a

pharmacist for bismuth subnitrate, caused death in thirty-six hours. Adults have recovered from taking 35 gm. of the carbonate. Forty-five grams caused death in seventeen hours, and from 10 to 12 gm. caused death in thirteen hours. Mayerhofer and Meixner reported a case in which 10 gm. of barium carbonate was found in the stomach of a man who had taken rat poison with suicidal intent. Krafft reported the death of a man who died after eating some cooked beans. The remainder of the food contained granules of a white powder which on analysis proved to be a mixture of the carbonate and sulphate of barium. The possibilities for poisoning were markedly increased by roentgen-ray examinations due to contamination (Krause) of the harmless sulphate with soluble barium salts. In Warsaw, an epidemic of muscular paralysis resulted from the intoxications due to the adulteration of flour with barium sulphate and carbonate (Higier).

Barium sulphid caused ten deaths in cases in which quantities ranging from 38 to 120 gm. had been taken. An 8 ounce guinea-pig was fed one-fourth grain portions of barium sulphid for four successive mornings, with no ill effects. The experimenter (Stedan) then swallowed a dose of proportionate size (61 grains, 120 pounds body weight) with toxic symptoms, but recovery.

The shortest time for death in a barium poisoning occurred in ten minutes after the ingestion of 40 gm. of barium sulphid.

Thirty grams of barium nitrate caused death in one hour. Tidy, in 1868, reported one death from 15 gm. in six and one-half hours. Baum reported two deaths. A tailor took a teaspoonful of barium nitrate for sodium bicarbonate, death occurring in five hours; in another instance, death occurred in thirteen hours. Baum, in the first case, found 0.1293 gm. of barium nitrate in the stomach and contents, 0.0313 gm. in the liver, spleen and kidneys, and 0.005 gm. in the urine, while in the other case, in which life was prolonged for thirteen hours, no barium was found in the viscera.

Thirty grams of barium acetate given in mistake for sodium ethylsulphate caused death, the time not being given.

Grossly, post mortem the organs show congestion, and the description given under Case 1 is practically the same as found in other cases reviewed. The small intestine in Eschrict's case and the rectal mucosa in Tidy's case was gangrenous.

ANALYSIS AND DISTRIBUTION

An aliquot portion of the organs was made alkaline and ashed. The residue was dissolved in from 3 to 5 c.c. of 10 per cent. hydrochloric acid, diluted to 100 c.c., and the barium precipitated as the sulphate. The sulphate was filtered and washed free from sulphuric acid. The precipitate was fused with potassium carbonate and the cooled fusion was boiled with about 25 c.c. of water and filtered. The filtrate was tested for barium. The precipitate was digested with hydrochloric acid and filtered, the residue washed, the washings added to the original filtrate, and the usual determination for barium made. Linossier found barium in the greatest amount in the bones, in less quantity in the liver, kidneys, brain and cord, and only traces in the lungs, muscles and heart. The distribution per hundred grams was fairly uniform in Table 1, the bowel and stomach containing the largest amounts. A chemical examination of the organs of a man dying nine hours after taking a mouthful of a solution of barium chlorid (about 8.6 gm. of crystallized barium chlorid) failed to show the presence of barium in the stomach, stomach content, esophagus and duodenum. The heart, blood of the heart, with the lungs, contained 0.158 gm. of barium sulphate.

In an attempt to determine the presence of normal barium in organs, the material of eleven cases with negative histories of poisoning was used. The liver, kidney, bowel and brain failed to give the chromate and sulphate tests for barium in 200 gram samples. A spectrum of barium was obtained in all the material except the brain.

COMMENT

The barium sulphate given to patients for roentgen-ray examination should be only a chemically pure grade and be given by the person who is to make the examination. Each lot of barium sulphate should be tested for soluble barium compounds. In this way faulty prescriptions of physicians and careless dispensing by pharmacists would be avoided.

THE BLOOD IN PURPURIC SMALLPOX

CLINICAL REVIEW OF FORTY-EIGHT CASES *

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Bancroft [1] found twelve instances of the purpuric type in 1,200 cases of smallpox during the Boston epidemic in 1901. The percentage of this type of the disease in any given epidemic has probably never been accurately estimated. Its clinical and laboratory differentiation from the hemorrhagic pustular form has never been stressed by the epidemiologist or the clinician who prefers to include these two forms under one general term of hemorrhagic or malignant smallpox.

TABLE 1.—*Smallpox Cases Admitted to Minneapolis General Hospital from March 1, 1924, to Feb. 28, 1925*

	Cases	Per Cent.	Deaths	Per Cent.	Per Cent. of Total
Discrete pustular (mild)	191	39.8	10	5.2	2.1
Confluent pustular (severe and fatal)	110	22.9	55	50.0	11.5
Hemorrhagic pustular (severe and fatal)	131	27.3	106	80.9	22.1
Purpuric (fatal)	48	10.0	48	100.0	10.0
Total	480	100.0	219		44.0
	(37.6%)		(66.0%)		
Entire city	1,276		332		26.0
State (outside municipalities)	1,892		105		5.5
Entire state	3,168		437		13.8

In the 1924 epidemic in Minnesota, several cases of the undoubted purpuric type of smallpox were reported to the state board of health and recorded as hemorrhagic smallpox. In the fall and winter of the same year, a large number of cases with clinical purpura were recorded in Minneapolis, of which forty-three deaths of purpuric smallpox were reported.

At the Minneapolis General Hospital, forty-eight cases were diagnosed as purpuric out of the total admis-

* A more detailed report is being prepared for publication.
* Read before the Hennepin County Medical Society, April 6, 1925.
* From the clinical laboratory and the contagious disease service (Dr. L. O. Dart, chief of the service) of the Minneapolis General Hospital.
1. In Osler, William, and McCrae, Thomas: Modern Medicine, Philadelphia, Lea Brothers & Co. 2: 284, 1907.

sion of 480 cases in twelve months ending Feb. 28, 1925 (Table 1). During the same period the state outside of Minneapolis had 1,893 cases with 105 deaths, a mortality of 5.5 per cent. Concurrently, there were 131 cases of hemorrhagic pustular smallpox. No single epidemic of any magnitude in recent years showed such a high percentage of this type of smallpox as that in Minneapolis.

Councilman [1] states that "it is doubtful if a sporadic case could be correctly diagnosed, particularly if the physician were unacquainted with smallpox."

Litten [2] cites a case in a man, aged 30, who came under his observation at Frerich's clinic. The man suddenly developed chills and a high fever, accompanied by pain in the lumbar region. Within the next two days, a profuse hemorrhagic exanthem developed all over the body. A diagnosis of fulminating purpura was provisionally made. On the fifth day, profuse hemorrhages occurred from the kidneys, stomach, intestinal tract, nose and lungs. Soon, peculiar, distinctly indented pustules appeared on the cheeks and abdomen, which clinched the diagnosis. He makes these significant comments:

> The diagnosis of hemorrhagic (purpuric) smallpox may be very difficult, owing precisely to the resemblance of this disease picture to fulminating purpura, particularly if the disease runs its course without the formation of pustules and occurs at a time in which no epidemic of smallpox exists.

Similar difficulties of diagnosis are recorded by the health officials of Detroit in the recent outbreak in that city, and the authorities of Essex Border Municipalities, Ontario, in the outbreak in Windsor, Ont., which was said to have been introduced by a companion of the man who was responsible for the Duluth outbreak at about the same time

In connection with the Windsor epidemic, an illuminating account illustrating this point may be briefly given.[3]

> M. B., aged 34, a trained nurse, was admitted to one of the general hospitals with a diagnosis of acute appendicitis. The appendix showed a hemorrhagic area in its distal end. The following night she broke out with a mixed kind of rash. Her face was flushed as with scarlet fever. There was a rash on the body which resembled measles. The case was not believed to be smallpox, but the patient was isolated. On the fifth day, when she was allowed to go home, there was blood in the urine. She died within a few days. Exposure to smallpox was traced later.

In Minnesota, several authentic cases may be cited [4] in which such diagnoses as purpura hemorrhagica, hemorrhagic scarlet fever and malignant measles had been made clinically:

> Jan. 26, 1924, in Duluth, a Canadian, aged 54, who had never been vaccinated, died of hemorrhagic smallpox. Ten days after leaving Canada, he had developed severe backache and general pains, but since these symptoms followed an accident they were thought to indicate internal injuries and he was admitted to a Duluth hospital, January 20, as a surgical case. A few hours later he was found to have an erythematous rash that was not characteristic of any one of the communicable diseases. While smallpox was considered, it was not definitely diagnosed until January 25. He died on the following day.
>
> The first case of malignant smallpox recognized during life in Minneapolis was a woman who came to Minneapolis, June 11, and developed symptoms of smallpox, June 29. She died, July 15, 1924. That earlier cases not recognized as smallpox had occurred was evident.
>
> A man, aged 64, an orderly in the employ of the Minneapolis General Hospital, who worked in the contagious disease department, suddenly developed symptoms suggesting fulminating scarlet fever or acute poisoning, June 20, 1924, and died three days later. The postmortem diagnosis was purpura hemorrhagica. Careful review of the necropsy findings and history conducted about five months later, in the light of our subsequent experience, established beyond doubt that this was the first case of purpuric smallpox unrecognized during life in Minneapolis.
>
> Oct. 29, 1924, a second patient with hemorrhagic smallpox died in St. Paul. The death certificate filed by the attending physician gave the cause of death as "bronchopneumonia complicating measles." It is certain that this death was due to hemorrhagic smallpox, because persons exposed developed smallpox, and four of them died of the hemorrhagic type. Eight days later, the mother developed mild symptoms. Only one skin lesion appeared, on the left forearm. She had been successfully vaccinated in 1879. Her husband contracted smallpox from her and died of the hemorrhagic type after an illness of only thirty-six hours.

It was a frequent experience in the receiving ward of this hospital to find clinically purpuric cases sent in undiagnosed or as suspected scarlet fever or measles during and even subsequent to the height of the epidemic.

It is clearly evident, therefore, that the diagnosis of purpuric smallpox in general practice is an exceedingly difficult if not impossible one, especially if it happens to be an isolated case. The reason is obviously the increasing rarity of this type of smallpox even during a severe epidemic.

Just why Minneapolis alone, with its imaginary line of boundary from St. Paul, has suffered this and other malignant forms of smallpox far greater in number than the latter city and any other cities of the civilized countries within the last quarter of a century or more can probably never be fully explained.[5]

A brief clinical review of these cases, together with a discussion of a possible earlier correct diagnosis by laboratory method, would seem timely.

According to the standard textbooks, smallpox is classified into three main groups, the discrete pustular, the confluent pustular, and the hemorrhagic. The hemorrhagic group is again classified into the hemorrhagic pustular, in which hemorrhages occur principally into the fully developed pustules and the purpuric. The term malignant is applied to the hemorrhagic group in general by some writers and to the purpuric type only by others.

PURPURIC SMALLPOX: TWO CLINICAL TYPES

According to the cutaneous changes and clinical course, purpuric smallpox is recognized in two types, primary and secondary. The primary or early purpuric is that in which no papules or pocks can usually be demonstrated. Diffuse, deep erythema, miliary petechiae and ecchymoses constitute its characteristic cutaneous manifestations. The course of the disease is short and abrupt. Death occurs within a few days after the onset. The secondary or late purpuric shows localized crops or a diffuse eruption of papules, which slowly develop into vesicles and pustules. The appearance of these lesions is characteristic. They are often coalesced, are small, flattened and umbilicated, and suggest an arrested development of the pocks. These pocks may show a bluish

2. Litten, M., and Senator, H.: Diseases of the Kidneys and the Spleen, Hemorrhagic Diseases, in Nothnagel's Practice, Philadelphia, W. B. Saunders Company, 1905, p. 771.

3. From the Minnesota State Board of Health.

4. Minnesota State Board of Health: Minnesota's Experience with Smallpox of the Malignant Type, Bull. State Bd. of Health, Feb. 5, 1925.

5. The principal reason, in my opinion, lies in the fact that a large percentage of the population of Minneapolis is made up of Christian scientists and other cult followers who have openly and consistently opposed vaccination.

discoloration in the center. Erythema and petechiae may not play as prominent a part as in the primary type. The course is somewhat prolonged. Death ensues invariably after a period of semiconsciousness or irrational state. Most of the authors include the latter type with the hemorrhagic group. The purpuric state, however, dominates the clinical picture sooner or later.

ANALYSIS OF FORTY-EIGHT CASES

An analysis of forty-eight cases was made. Twenty-six were classed as belonging to the primary and twenty-two to the secondary type (Table 2). There were twenty-two males and twenty-six females. The age incidence was of interest. An average age given for the males in the primary type was 52 years, while that for the females was 26.3. In the secondary type the male was 42, while the female was 37.5 Ten of the females in the primary type were between 20 and 40 years of age, while only three of the males were in the corresponding age period. Eight of the females in the secondary type were between the ages of 20 and 40, while four of the males were in the same period In other words, eighteen of the female victims were under 40 years of age, while only seven of the males belonged to the same age period A reverse ratio was true during the subsequent four decade period

The vaccination history also was worthy of note. Nineteen, or 40 per cent., had never been vaccinated. Twelve, or 25 per cent, gave a history of vaccination twenty or more years before, and four, or 8.3 per cent., had been vaccinated within only ten days of the admission. These constituted 73.3 per cent. of the cases studied. Nine, or 18.7 per cent., claimed no "takes." One case, a nurse in training, gave a history of smallpox four years before, and for that reason had not been subjected to the routine vaccination No history was obtained in three cases

The prodromal period was given as between one and six days, with an average of three days The duration was generally between three and ten days One patient with the secondary type lived fourteen days, another seventeen days. An average of the primary type was 5.3 days, while that of the secondary was 9.1 days. A general average was seven days.

The onset was sudden and stormy, often accompanied by nausea and vomiting, chills and fever. Headache and backache were the dominant complaints. These and other prodromal signs were those of an acute cold or of an impending infectious disease.

Fig. 2.—Petechial spots on the trunk of the patient shown in Figure 1, taken before death.

The first visible changes in the clinical picture in the primary type occurred with the development of an erythematous flush over limited areas of the body, notably the face, the neck, the anterior part of the chest, and the groins. Most of the cases showed definite cutaneous manifestations on admission (Figs. 1, 2 and 3). They were the progressively spreading and deepening diffuse erythema, variously described from a bright red to a dark plumb or lobster color, and the increasing petechiae and ecchymoses, most pronounced on the abdominal wall and the inner aspects of the thighs, which might easily be mistaken for large, dark freckles The chest, neck, arms and legs now became.

Fig. 1.—Typical face of the primary type of purpuric smallpox, showing dusky erythematous flush.

TABLE 2.—*Purpuric Smallpox: Classification of Forty-Eight Patients According to Sex and Age*

	Male Primary	Female (Early)	Secondary (Late)		Total	
Cases		26	22		48	
Sex:						
Male		13 50%	9 41%		22 46%	
Female		13 50%	13 59%		26 54%	
Age:						
Male	Average	52 years	41.1 years		46.6 years	
Female	Average	26.3 years	37.5 years		31.9 years	
Male	Low	20 years	20 years		20 years	
Female	Low	20 years	21* years		20.5 years	
Male	High	76 years	64 years		70 years	
Female	High	68 years	60 years		64 years	
Decades:			Male	Female†	Male	Female
20-30	3	5	4	4	7	10
31-40	0	5	0	3	0	8
41-50	4	2	2	1	6	3
51-60	2	0	2	4	4	4
61-70	2	1	1	0	3	1
71-80	2	0	0	0	2	0
Total	13	13	9	13	21	26
20-40	3	10	4	8	7	18
41-80	10	3	5	5	15	8
Total	13	13	9	13	22	26

* A female infant, aged 2 months, not included.
† (2 m.).

as a rule, studded with these punctuate subcutaneous hemorrhages, which rapidly developed into larger black spots, many of which might become coalesced In the secondary type, the usual initial rash was followed by a slow and gradual development of the modified pocks (Fig 4) A measles-like eruption might persist Miliary petechiae soon developed, followed by areas of erysipeloid edema and ecchymoses, which frequently resulted in the detachment of the skin, leaving a mortified surface.

Subconjunctival hemorrhages often antedated cutaneous petechiae. Early bleeding from the mouth and the

Fig. 3.—Petechial spots in another primary type of purpuric smallpox.

nose, bloody urine and stools were invariably present. Frank hemoptyses as well as hematemeses were often recognized. Twenty-three of the twenty-six women showed on admission more or less profuse uterine hemorrhages.

Temperature after admission to the hospital was comparatively low, seldom being above 101 F. The secondary type, as a rule, showed a higher curve. A consistent decline in temperature toward the end was noted in nearly every case.

The heart and lungs were recorded as normal on admission in every instance. Subsequent physical examinations of the chest were not attempted.

Subjectively, no outstanding complaints were heard. Minor aches and pains might be present. Occasionally, the victim was found to be in an unusually jovial mood or to exhibit only an anxious state of mind. A clear consciousness, lack of definite complaints but various degrees of restlessness bordering on prostration in some cases were noted among the primary type, while a marked prostration and semiconsciousness or irrational state was the terminal picture common among the more protracted secondary type. Sooner or later, many of these patients showed signs of embarrassed breathing due to the edema of the respiratory tract.

THE BLOOD: FOUR CARDINAL CHANGES

The examination of the blood in the purpuric type of smallpox gave findings of extreme interest and of vital diagnostic value. The principal changes were found in the cellular elements of the circulating blood, involving the numerical value of platelets and leukocytes (Fig. 5), on the one hand, and the morphologic structure of leukocytes and erythrocytes on the other (Fig. 6).

A marked and progressive thrombopemia until its termination (Fig. 5) characterized this type of the disease, in contradistinction to a steady and rapid rise in the platelets after the vesicular stage in all other forms of smallpox. No references have been found in the literature concerning this signifiant behavior of platelets in purpuric smallpox. Simon [6] states that there is a great diminution of platelets during the febrile period and a material increase during the pustular stage in smallpox, but fails to observe further changes.

A rapid and decisive decline of the polymorphonuclear neutrophil leukocytes was another significant finding (Fig. 5). Such investigators as Ferguson,[7] Councilman,[8] Magrath, Brinkerhoff and Bancroft,[9] Erlenmeyer,[10] Kammere,[11] Schilling,[12] Hoffman,[13] Pantasis,[14] and others all agree as to the presence of a definite lymphocytosis in smallpox. Their results were corroborated in the main by the figures obtained here. Along with the appearance, in varying numbers, of such abnormal forms as myelocytes, young leukocytes, and atypical and pathologic lymphocytes, an absolute lymphocytosis of a moderate degree was found in all forms of pustular smallpox throughout the course of the disease except, according to our observation, during the maculopapular stages and the early desiccation period in the severe forms in which the patients finally recovered. In the purpuric type, however, a disappearance of the polymorphonuclear elements was effected so suddenly and so nearly completely that, with a very high leukocyte count, a leukemic state or acute benign lymphadenosis might be diagnosed from the blood smear alone.

Another striking condition was the appearance of pathologic forms of normoblasts, basophilic stippling and polychromatophilia without clinical or laboratory evidence of severe anemia or chronic sepsis. Severe and protracted cases of the pustular type might rarely show these findings, as reported by several authors, but never so extensively and constantly as in the purpuric type. A most intense bone marrow stimulation of an unparalleled nature must have taken place in order to produce such phenomenal changes in the erythrocytes within such a short space of time.

Fig. 4.—Petechiae, ecchymoses and hemorrhagic pocks in the secondary type of purpuric smallpox.

The presence in the stained smear of fragments of condensed neuclear bodies, which were usually sur-

6. Simon, C. E.: Variola (the Blood), Clinical Diagnosis, Ed. 9, Philadelphia, Lea and Febiger, 1918, p. 827.
7. Ferguson, A. R.: The Leukocytosis of Variola, J. Path. & Bacteriol. **3**: 411, 1902.
8. Councilman, W. T., in Osler's Modern Medicine, Philadelphia, Lea Brothers & Co. **2**: 287, 1907.
9. Magrath, G. B.; Brinkerhoff, W. R., and Bancroft, I. R.: The Leukocyte Reaction in Variola, J. M. Res. **6**: 247, 1904.
10. Erlenmeyer, E., and Jalkowski, E.: Das Blutbild bei Pocken und Impfpocken, Deutsch. med. Wchnschr. **39**: 21, 1913.
11. Kammere, cited by Erlenmeyer.
12. Schilling, V.: Ueber das Leukozytenbild bei Variola vera, München. med. Wchnschr. **63**: 154, 1916.
13. Hoffman, W. H.: Ueber die Blutveranderungen bei Pockenkranken, München. med. Wchnschr. **70**: 1052 (Aug. 10) 1923.
14. Pantasis, George: The Blood Picture in Variola, with Special Consideration of the Prevailing Epidemic in Berne and Its Diagnostic Importance, Schweiz. med. Wchnschr. **54**: 1189, 1924.

rounded by a small portion of neutrophilic cytoplasm, was the most striking finding (Fig. 6). Magrath [15] undoubtedly refers to this fact when he mentions "the presence of evident degenerative phenomena in the polymorphonuclear leukocytes in the hemorrhagic cases, such as vacuolization of the protoplasm, condensation and fragmentation of the nucleus, and fragmentation of the whole cell." That these deeply staining rounded fragments were derived from the polymorphonuclear leukocytes could easily be demonstrated. Not only were the condensed nuclear fragments and their sur-

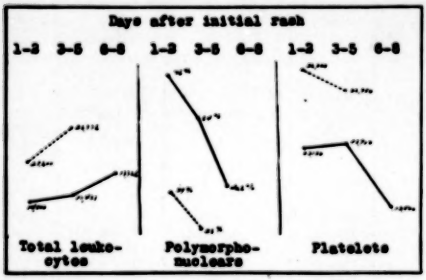

Fig. 5.—Behavior of the total leukocytes, polymorphonuclears and platelets in forty-two cases of primary and secondary smallpox: broken line, primary type; solid line, secondary type.

rounding cytoplasm characteristic of those of a neutrophilic leukocyte, but the various appearances of these nuclear bodies indicated conclusively the stages of retrogressive changes which a leukocyte might undergo. These changes were due undoubtedly to the direct effect of a toxin-virus on the cellular structure of the mature leukocytes in the circulating blood rather than to a result of any changes that might take place in the myeloid elements of the bone marrow. A marked neutropenia thus effected was, therefore, in a large measure, attributable to a degenerative phenomenon specific in this type of smallpox. In all other forms of smallpox, as in acute infectious diseases, regenerative activity of the entire hematopoietic system was consistently maintained.

After having studied the blood from more than 200 cases of pustular smallpox, including the hemorrhagic pustular type, and from a large number of patients in an extremely toxic and infectious state in which there might often be questionable cutaneous manifestations, it was reasonably established that these morphologic changes in the blood, particularly in the mature leukocytes, were reasonably specific and occurred sufficiently early to make them of positive value in early diagnosis in this type of smallpox. Investigators have apparently failed to record this important observation. Furthermore, the blood in purpuric smallpox presented such other findings of extreme toxemia and bone marrow changes as were seldom found in any other disease.

Practical application of these procedures was soon instituted in all doubtful as well as frank cases of purpuric smallpox. These four cardinal changes soon became not only a positive aid in diagnosis of the clinically purpuric cases, but also the only known means of early differentiating other questionable cases, such as uncomplicated hemorrhagic pustular smallpox, exanthems, notably measles and scarlet fever, and acute infectious diseases, septicemia and toxemia in which there were toxic erythema and petechiae.

15. Magrath, G. B., and others: The Leukocyte Reaction in Variola, J. M. Res. 6:247, 1904.

BACTERIOLOGIC STUDY OF THE BLOOD

In the terminal stage, a bacteremia was so intense in some cases that a mere blood smear from a clean skin surface showed the presence of organisms They were large, gram-positive diplococci, which on culture proved to be hemolytic streptococci

Twenty-eight blood cultures were studied. Of the nineteen antemortem cultures, eight showed hemolytic streptococci, six showed nonhemolytic streptococci, and five were sterile. Of the nine postmortem cultures, eight showed hemolytic streptococci and one, nonhemolytic streptococci. Thus, sixteen of the twenty-eight cultures showed the hemolytic type of streptococci, and seven the nonhemolytic type; five were negative.

What etiologic bearing these virulent streptococci might have on the purpuric state and particularly on the blood picture could not be definitely stated. It would seem reasonable to believe, however, that their direct insult on the entire hematopoietic system and on the mature circulating leukocytes might largely contribute to the production of these important changes.

OTHER CHANGES IN THE BLOOD

The hemoglobin and the erythrocyte count were practically normal. Many of the primary type showed no changes until death. Those of the secondary type showed the quantitative changes of a definite secondary anemia. Its severity was dependent on the extent of the hemorrhages and the duration of the disease.

Changes in the lymphocyte series were identical with those found in pustular smallpox; namely, the appearance of such pathologic forms as atypical lymphocytes, plasma cells, irritation forms of Turk, and occasionally

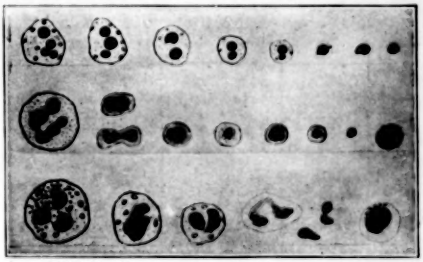

Fig. 6.—Leukocytes (in top row) in purpuric smallpox, showing fragmentation of the whole cell in various stages. At left in lower rows, normal leukocytes. Remainder of middle row, pathologic normoblasts as found in the purpuric blood. In lower row, leukocytes in the bone marrow stimulation showing heavy granulation, vacuolization, faint neutrophilic granules, clumps of parachromatin in the cytoplasm, unilobular nucleus, disintegration of cell, etc.; at right, lymphocyte undergoing similar changes.

cells of slightly immature type. These cells also showed evidence of degenerative changes somewhat identical with those found in mature leukocytes.

Monocytes showed no characteristic changes except such as were attributed to the toxic condition of the host.

In the leukocyte series, myelocytes and metamyelocytes were frequently found. Changes in the nucleus and cytoplasm commonly found in any toxemia and the so-called bone marrow stimulation were constantly encountered. Leucoblastic cells were occasionally found.

The percentage of eosinophils and basophils remained unchanged throughout the course of the disease.

Fragility of the erythrocytes remained normal.

Study in the coagulation and bleeding time was not conducted in a sufficient number of cases to record any conclusive observation. However, a fairly reliable impression as to the bleeding time was obtained during the routine puncture of the fingers. This was considerably prolonged Tests for the coagulation time gave inconstant results

REPORT OF CASES

CASE 1.—E. R., a man, aged 54, was admitted to the hospital with a diagnosis of grip. The following morning, the temperature was 102 F.; a slight red flush developed about the right groin; there were no petechiae. The blood examination revealed: platelets, 72,000; leukocytes 7,900, with 77 per cent. polymorphonuclears, 12 per cent. lymphocytes and 8 per cent. monocytes. Several normoblasts, basophilic stippling and beginning disintegration of leukocytes were present. Red cells were normal. He was transferred to the contagious department as his illness suggested purpuric smallpox. The day following, his temperature was 99 F.; the platelets numbered 30,000; leukocytes, 4,400, with 18 per cent. polymorphonuclears and 63 per cent. lymphocytes. Nuclear fragments of leukocytes, normoblasts, basophilic stippling, polychromatophilia and other evidences of an extreme toxemia were found. The patient now showed definite erythema and a few petechial spots. Blood culture was positive for nonhemolytic streptococci. He died the following morning. This was the only case in which a persistent leukopenia was present.

CASE 2.—A baby girl, premature, who had been cared for at the maternity ward since its birth about two months before, suddenly developed indisposition, slight fever and redness of the skin. There were a few papular eruptions over the forehead, on the scalp, and about the groins and extremities. A probable diagnosis of sclerema was made by the consultants.

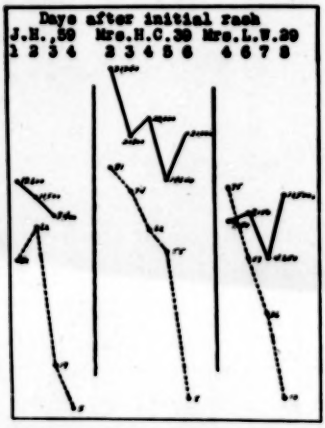

Fig. 7.—Leukocytes (solid line) and polymorphonuclears (broken line) in three cases of purpuric smallpox.

The blood examination revealed: platelets, 25,000; leukocytes, 69,000, with 10 per cent. polymorphonuclears, 85 per cent. lymphocytes; normoblasts, basophilic stippling, pathologic lymphocytes and fragments of leukocytes. Because of the age of the patient, a definite diagnosis of purpuric smallpox from these findings alone was withheld. At necropsy, streptococci were present in the direct smears from the liver and spleen. Blood cultures showed nonhemolytic streptococci. Histologic examination of the skin showed typical lesions of smallpox.

CASE 3.—Mrs. J., aged 26, was admitted to the contagious disease ward in an extremely toxic state. She had given birth to a healthy child three days before. There were atypical erythematous patches, and a few papular lesions over the

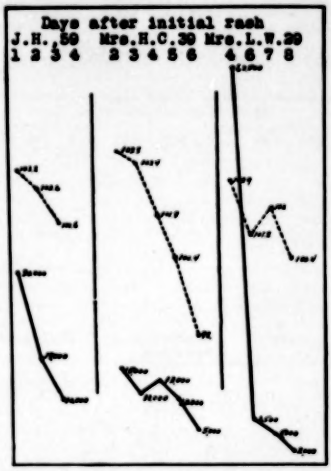

Fig. 8.—Platelets (solid line) and temperatures (broken line) in three cases of purpuric smallpox.

forehead and over the abdomen and groins. There were a few petechial spots. The condition was suggestive of purpuric smallpox. The blood examination revealed: platelets, 125,000; leukocytes, 29,000, with 94 per cent. polymorphonuclears. The blood smear showed toxic changes in the polymorphonuclears only. The blood study did not suggest purpuric smallpox. A histologic examination of the skin showed no smallpox lesions. The final diagnosis was puerperal sepsis with toxic erythema.

CASE 4.—T. R., aged 17, had been under an intensive treatment for active syphilis for about two weeks. He suddenly developed a sore throat, enlarged glands, high fever, and diffuse deep erythematous patches over the entire body. His eyes were bloodshot. No petechiae. Diagnosis was reserved. He was transferred to the contagious disease ward as presenting a case of possible purpuric smallpox. The blood findings were those of an acute toxemia with a platelet count of 160,000 and leukocytes 18,000, with 80 per cent. polymorphonuclears. The final diagnosis was drug rash.

CASE 5.—Mrs. B. S., aged 23, was admitted to the contagious disease ward with a diagnosis of measles. She had been confined a few days before. She showed an extensive eruption of measles, and areas of petechiae over the lower abdomen. Her eyes showed subconjunctival hemorrhages. The blood findings showed 160,000 platelets and 11,600 leukocytes, with 88 per cent. polymorphonuclears. There were no morphologic changes in the smears. The patient made an uneventful recovery.

CONCLUSIONS

The purpuric type of smallpox is a definite clinical entity which presents a series of characteristic clinical manifestations wholly or partly unlike those of pustular smallpox.

Its occurrence is rare. An unusually large number of cases of this type of smallpox were recorded in Min-

neapolis during the recent epidemic. Ten per cent. of the cases admitted to the Minneapolis General Hospital within a year were diagnosed as purpuric

Clinical diagnosis of purpuric smallpox is often difficult. It is seldom made early. Differential diagnosis from other fulminating exanthems and purpuric states may be impossible.

The changes in the blood in purpuric smallpox occur comparatively early, and are sufficiently specific to make its prompt and definite recognition possible.

An attempt was successful in differentiating this type of the disease during its initial period from other forms of smallpox and also from other doubtful exanthems and acute infectious and toxic diseases, by means of blood examinations.

ROENTGEN-RAY TREATMENT OF TUMORS OF THE BRAIN *

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The majority of intracranial tumors, excluding pituitary new growths, are infiltrating gliomas which can rarely be completely removed, but which sometimes progress favorably after palliative decompression. Those which undergo cystic degeneration are especially likely to do well. The meningiomas or dural endotheliomas, which compress but do not invade the brain, are purely surgical problems, because they do not recur after removal. Eighth nerve tumors are also benign, but a partial intracapsular enucleation must be done in order to save the seventh nerve. Roentgen-ray treatment of benign tumors has not given good results.[1]

I believe that roentgen-ray therapy should be used only after the diagnosis of glioma has been made. The tumor should be localized and exploration should be

Fig. 1 (Case 1).—Transverse section, showing glioma of temporosphenoidal lobe invading optic tract, lentiform nucleus, internal capsule, and thalamus; and displacing the descending horn from the body of the ventricle.

done, so that encapsulated tumors will not be overlooked. If a benign tumor is not found, the diagnosis of glioma should be verified, if possible, by exposure of an infiltrating tumor, or by aspiration of the typical yellow fluid from a cystic glioma. It seems wise to leave a decompression before starting roentgen-ray treatment, because, even if intracranial pressure is not increased by the tumor, it may be temporarily increased by the treatment. Failure to explore and to decompress has resulted not only in overlooking operable tumors, but in fatalities which might be attributed to the roentgen-ray treatments.[2]

I have studied ten cases of glioma of the brain, of which six were verified and four were unverified, to determine whether postoperative roentgen-ray treatment [3] had any effect. In four cases the treatment had no favorable influence; in four cases there was more or less marked improvement, which may have been due to the surgical procedures; and in two cases beneficial effect was demonstrated by relapse on withdrawal, and improvement on resumption, of the roentgen-ray treatment. Two illustrative cases from each of these groups will be reported.

Fig. 2 (Case 1).—Transverse section, posterior to level of Figure 1, showing invasion of crus.

REPORT OF CASES

Group A: *Two cases in which roentgen-ray treatment had no favorable effect.*

CASE 1.—O. S., a man, aged 45, seen in December, 1923, complained of headache, dizziness and impaired vision for two months. Examination showed loss of the right lower quadrants of the visual fields, which progressed in three weeks to a complete homonymous hemianopia, normal optic disks, and a pathologic great toe reflex on the right. The patient was right-handed. Cerebral pneumograms showed displacement outward of the descending horn of the left lateral ventricle, and irregularity of outline of the descending and posterior horns. A right subtemporal decompression was done under local anesthesia. In January, 1924, he gradually became aphasic, and in February he developed a right hemiparesis. Beginning January 25, roentgen-ray treatments were given once a week. He died in March, 1925. Necropsy showed a glioma of the left temporosphenoidal and occipital lobes, thalamus, crus and pons, involving the descending and posterior horns of the ventricle (Figs. 1 and 2).

CASE 2.—M. A., a woman, aged 32, seen in November, 1924, in a semicomatose condition, had had jacksonian convulsions focal in the right side of the face for a year, partial motor aphasia and headaches for five months, and weakness of the right arm and leg for a week. Examination showed advanced choked disks, right hemiplegia, partial motor aphasia, and a positive Wassermann reaction on the blood. The diagnosis was glioma of the left frontal lobe, probably cystic, with

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* From the Department of Surgery, Stanford University Medical School.

1. Bailey, Percival: The Results of Roentgen Therapy on Brain Tumors, Am. J. Roentgenol. **12**:48 (Jan.) 1925. Roussy, G.; Cornil, L., and Leroux, R.: Tumeur méningée à type glial, Rev. neurol. **30**:294 (March) 1923.

2. Flatau, Edward: De la radiothérapie des tumeurs du cerveau et de la moelle, Rev. neurol. **1**:23, 176 (Jan., Feb.) 1924, Obs. 8.

3. Eight patients were treated at Stanford University Hospital by Dr. W. E. Chamberlain and Dr. R. R. Newell; one at St. Luke's Hospital by Dr. J. M. Rehfisch, and one at St. Francis Hospital by Dr. J. R. O'Neill.

recent hemorrhage. November 26, a left subtemporal decompression was done under local anesthesia; 35 c.c. of yellow fluid was aspirated from a cyst in the posterior portion of the frontal lobe, and 15 c.c. of air was injected into the cyst. Roentgenograms showed that tumor projected into the anterior and mesial aspects of the cyst (Figs. 3 and 4). There was marked temporary improvement, but the cyst filled rapidly; 50 c.c. of fluid was evacuated, December 16; 30 c.c., December 27, and 20 c.c., December 31. December 22 and 29, roentgen-ray treatments were given. In spite of aspirations and treatments, her condition constantly became worse. Jan. 3, 1925, a right subtemporal decompression was done under general anesthesia. Roentgen-ray treatments were given once a week from January 15 to February 20. During that period the cyst was evacuated eight times, of amounts varying from 25 to 45 c.c. February 28, the patient died. Necropsy was not obtained.

In Case 1, five treatments had no effect, and necropsy showed invasion of the thalamus, corpus striatum, internal capsule, cerebral peduncle and pons. A better result might have been expected in Case 2. The glioma was partly cystic, which is often favorable; bilateral decompressions were done; the cyst was emptied at frequent intervals, and intensive roentgen-ray treatment was administered. Despite everything, the tumor caused death in two months. Necropsy might have explained the outcome, as it did in Case 1.

Case 2 illustrates the fallacy of relying on evacuation of a cystic glioma, and omitting postoperative roentgen-ray treatment Two of my patients who did not receive treatment remained well four and five years after aspiration of large cysts of the cerebellum and frontal lobe. A third patient made such an excellent recovery after evacuation of a huge frontal lobe cyst that he was not treated; but he died within a year of a rapidly invading tumor. This experience, and the result in Case 2, make it obvious that all cystic gliomas should be treated with roentgen ray after operation. A fourth patient, who made an astonishing recovery after evacuation of a large cystic glioma of the cerebellum, receives regular treatments; he belongs in Group B, and the report is not included in this paper.

Fig. 3 (Case 2).—Cyst partly filled with air, showing irregular tumor in anterior wall. Lateral projection, horizontal ray, with face up.

Group B: *Two cases in which favorable effect of roentgen-ray treatment is not proved.*

Case 3 (Case 8221 of Newell's[4] report in which roentgenograms are reproduced).—C. C., a man, aged 29, seen in March, 1922, complained of major epileptic attacks preceded by hallucinations of smell for three years, and of headache, vomiting, impaired vision and double vision for a month. Examination showed choked disks, vision 15/200 in each eye, paresis of the right sixth nerve, and pathologic great toe reflexes. Roentgenograms showed calcification in the right frontal lobe. March 20, osteoplastic exploration and subtemporal decompression were done under local anesthesia. A noncystic infiltrating tumor was found under the inferior frontal convolution, and a small piece removed for microscopic examination showed glioma containing calcareous deposits. April 2, he was dismissed free from headache and vomiting, with a large cerebral hernia. April 12, visual acuity was 15/15 in each eye, and the optic disks were almost flat. Roentgen-ray treatments were given once a month from May, 1922, until December, 1923. For eighteen months he drove a motor truck, and during that time he had only one convulsion. In December, 1923, the decompressed area, which had been depressed for six months, filled rapidly, and he developed headache and vomiting. March 1, 1924, the tumor was exposed under local anesthesia; 60 c.c. of yellow fluid was aspirated from its center, and the outer wall of the cyst, 3 cm. thick and 6 cm. in diameter, was removed. March 23, he was dismissed with a large hernia. Fifty or more cubic centimeters of fluid was aspirated from the hernia at weekly intervals up to July 7, after which time it remained soft. The patient's physical condition was excellent; but in September, 1924, he developed a psychosis with homosexual tendencies, and was confined in a hospital, where he died in December, 1924. Necropsy was not obtained.

Case 4.—L. L., a boy, aged 19, seen in January, 1924, complained of headache, dizziness, tinnitus, staggering gait, loss of vision, and double vision for a year. Examination showed advanced choked disks; vision, right, 20/70; left, 20/40; divergent squint; nystagmus; paresis of the left fifth and seventh nerves; marked ataxia, and positive Romberg falling to the left. February 2, a suboccipital exploration and decompression, under local anesthesia, showed an enlarged left cerebellar hemisphere in which the exploring needle met resistance, but obtained no cystic fluid, at a depth of 3 cm. When he was dismissed, March 7, the optic disks were almost flat; there was no headache, diplopia or tinnitus; the Romberg sign was negative, and the gait was much steadier. Roentgen-ray treatments were given once a month from March, 1924, until March, 1925, when they were discontinued to test for a relapse. In July, 1924, vision was normal, and he was doing heavy ranch work for eight hours a day. In December, 1924, the patient walked with an almost normal gait, and showed only slight ataxia of the left arm and leg. In May, 1925, eight weeks after the treatments had been discontinued, he considered himself perfectly well.

The probable sequence of events in Case 3 was cystic degeneration of the tumor, which accounted for the recession of the hernia, followed, after twenty months, by hemorrhage into the cyst. It seems likely that the roentgen ray was a factor in the degenerative process, but this cannot be proved, because it may occur with decompression alone. It is difficult to believe that the remarkable recovery in Case 4 was entirely due to relief of pressure; but, again, there is no proof of the effect of the roentgen ray. This patient is being tested for a relapse, and the future may show that he belongs in Group C.

Group C: *Two cases in which roentgen ray had a favorable effect.*

4. Newell, R. R.: Calcification in Brain Tumors, Surg. Clin. N. Am. 3:775 (June) 1923.

CASE 5.—E. P., a man, aged 52, seen in January, 1924, complained of headache for a month. Examination showed proptosis of the right eye, secondary atrophy of the right optic disk with total blindness, early left optic neuritis, a normal left visual field, destruction of the dorsum sellae, increased left knee jerk, and bilateral pathologic great toe reflexes. Cerebral pneumograms showed hydrocephalus of the right lateral ventricle, and marked deformity of the anterior horn of the left lateral ventricle, caused by an intraventricular tumor. The patient was right handed. January 29, a left subtemporal decompression was done under local anesthesia. The patient gradually developed a motor aphasia. March 4, a right subtemporal decompression was done under general anesthesia. Aphasia remained complete, and a right hemiparesis developed. Roentgen-ray treatments were given once a week from April until October, 1924. The hernias receded, the hemiparesis became much less marked, and the aphasia decreased until he could form intelligible sentences. October 7, the treatments were temporarily discontinued. November 23, the patient was admitted by ambulance, with very tight hernias, a complete right hemiplegia, and complete motor aphasia. Relatives said that the relapse had occurred during the previous five days. November 28, he received a roentgen-ray treatment. December 4, the hernias were soft, and the right arm and leg had regained considerable power. After a second treatment, December 6, there was further improvement; and when he was dismissed, December 17, his condition was precisely as before the relapse. Weekly treatments were continued, and in May, 1925, there was no change for better or worse.

CASE 6.—M. S. H., a man, aged 28, referred by Dr. Harvey Cushing of Boston, seen, Dec. 24, 1924, developed headache, vomiting, double vision, dizziness and unsteady gait in 1923. In January, 1924, Dr. Cushing did a suboccipital decompression, and in May, 1924, a partial removal of a glioma of the left cerebellar hemisphere. He received eight postoperative roentgen-ray treatments, the last, November 3. Headache and vomiting stopped, and diplopia decreased so that, in October, he could read fine print. In August he could walk only a few steps, but after September he walked a mile or more each day. Dizziness, which was very troublesome in July, had almost disappeared by October. December 15, six weeks after the last treatment, he became nauseated and very dizzy, with increased diplopia and ataxia. December 24, examination showed weakness of the left sixth and seventh nerves, diplopia at all distances, nystagmus, marked ataxia of the left arm and leg, and an extremely unsteady gait deviating to the left. He received roentgen-ray treatments, December 24 and 31, and once a month thereafter. Shortly after the first treatment, the patient was as well as before the relapse. Nausea and dizziness had disappeared, the gait was much steadier, and he could read without diplopia. April 5, 1925, he considered himself better than he had been since the onset of the trouble; and examination showed much decreased ataxia, steadier gait, and no diplopia at less distance than 20 feet.

Fig. 4 (Case 2).—Tumor projecting into mesial aspect of the cyst. Posterior projection, vertical ray, with face up.

These two cases offer satisfactory evidence of the beneficial effects of the roentgen ray on some tumors. In Case 5, the patient was getting steadily worse after bilateral subtemporal decompression; in Case 6, amelioration of the signs of cerebellar involvement came slowly, after numerous roentgen-ray treatments, and is not so easily attributed to the operative procedure as is the rapid disappearance of cerebellar signs in Case 4.

Withdrawal of treatment was promptly followed by relapses, severe in Case 5, and moderate in Case 6. Resumption of treatment resulted in extraordinarily rapid improvement in both instances. I can find only one recorded case which offers similar proof —Surgical No. 18688 of Bailey's [1] report—in which decompression did no good, but roentgen-ray therapy caused great improvement, which could be maintained only by regular treatments.

CONCLUSIONS

Roentgen-ray treatment of tumors of the brain, excluding pituitary tumors,[5] shoudd be undertaken only after accurate localization; after exploration to rule out benign tumor and to verify, if possible, the diagnosis of glioma; and after decompression, whether or not there is increased intracranial tension. With these requirements satisfied, postoperative treatment should be used persistently, even when the glioma is cystic.

There is no way of predicting whether the roentgen ray will have a favorable effect on the tumor. As some gliomas do well with decompression alone, good results can be attributed to the roentgen ray only by discontinuing the treatment, and demonstrating the beneficial effect of further treatment if there is a relapse. The treatment has been used on ten of my patients. Four times it had no effect; four times it cannot be proved to have been responsible for the clinical improvement; and twice it had a clearly favorable influence.

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5. The results of roentgen-ray treatment of pituitary adenomas will be presented in another paper.

Soy Bean as Pellagra Preventive.—The pellagra-preventive value of the dry soy bean as an addition to the general diet of the colored female inmates of the Georgia State Sanitarium was studied by Goldberger and Tanner during 1918. The daily issue was 3 ounces (85 gm.) but, allowing for various possible losses, it is estimated that those who ate well ingested the equivalent of approximately 2 ounces (56 gm.) of soy beans of normal digestibility. In spite of this, however, several cases of pellagra developed. Concurrently with the soy bean soup study a trial was made of the preventive value of a daily ration of approximately 200 gm. of dry California blackeye peas, also in the form of soup, with results indicating that this, too, was inadequate fully to prevent recurrence of pellagra. The dry soy bean and the California blackeye pea would appear to possess little, if any, pellagra-preventive value.—*Pub. Health Rep.* **40**:56 (Jan.) 1925.

IODIZED OIL AS A PYELOGRAPHIC MEDIUM

PRELIMINARY REPORT *

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Since the first attempt by Klose,[1] in 1904, to render the urinary tract opaque to the roentgen ray, it has been generally accepted that the essential properties of an ideal medium are opacity to the roentgen ray and nontoxicity. At present, sodium iodid best combines these properties. The effort to obtain an iodid salt more slowly soluble and sufficiently inert to be injected directly into the tissues has led to the use of certain fats which have been saturated with iodin. Such preparations have been found to show excellent shadows with the roentgen ray, and have been employed by Forestier [2] for intratracheal injections, and by Sicard [3] for subarachnoid injections, with no untoward effects. They likewise found that the toxicity of such a solution was exceedingly low and that it was absorbed only over a period of months when retained in the body.

Pyelograms made in a live dog under the usual technic for cystoscopy by the simultaneous injection of 4.75 c.c. each of iodized oil (right) and 12.5 per cent. sodium iodid (left); catheters extend to points indicated.

My purpose in this communication is to report some experimental work on the use of iodized oil as a pyelographic medium. The iodin compound [4] used contained approximately 40 per cent. of iodin combined with vegetable oil, and was used on a series of laboratory animals.

Large female dogs were chosen, and the ureters were catheterized following the administration of a small dose of morphin sulphate and with the usual technic for cystoscopy. Twelve injections were made, in each case from 4 to 5 c.c. of iodized oil being used for the pyelogram and an additional 0.5 to 1 c.c. for the ureterogram. In each instance, well defined pelvic and ureteral shadows were obtained. The animals were kept under close observation and have been entirely free from symptoms for a period of fourteen days.

In two of this series, bilateral pyelograms were made, using: (1) oil on both sides and (2) oil and 12.5 per cent. sodium iodid in opposite sides. These were followed by no untoward symptoms.

The iodized oil has been used on a few human subjects, with striking results and no unusual symptoms. Flat plates of the abdomen were taken in two patients twenty-four hours after the making of pyelograms, and no trace of the medium was visible. Both patients had had previous pyelograms and stated that they had no unusual pain following the use of the oil. The outlines of the pyelograms were unusually distinct, especially those of the calices of the pelvis. The ureterogram was easily followed even when superimposed on the vertebral column or pelvic bones.

CONCLUSION

This preparation appears to offer a pyelographic medium that is almost completely opaque to the roentgen ray, nontoxic, and entirely without untoward effects when injected into the renal pelvis. A more detailed report will be made giving our experiences in the clinic.

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* Read before the Yale Medical Society, Feb. 11, 1925.
* From the Department of Surgery, Yale University School of Medicine.
* Iodipin 40 per cent. is under consideration by the Council on Pharmacy and Chemistry, but has not yet been admitted to New and Nonofficial Remedies, pending the receipt of further information.

1. Klose, B.: Radiographie eines durch das Kystoskop diagnostizierten Falles von kompletter Ureteren Verdopplung, Deutsch. Ztschr. f. Chir. **73**: 613-617, 1904.
2. Forestier, J., and Sicard, J. A.: Iodized Oil as Contrast Medium, Bull. et. mém. Soc. méd. d. hôp. de Paris **46**: 463-469 (March 17) 1922. Forestier, J., and Leroux, L.: Radiographic Study of Intratracheal Injections of Iodized Oil, ibid. **47**: 299-304 (Feb. 23) 1923.
3. Sicard, Haguenau and Laplane: Transition of Iodized Oil, Subarachnoid Technic, Diagnostic Results, Rev. neurol. **1**: 1-5 (Jan.) 1924.
4. "Iodipin" 40 per cent., Merck & Co.

CONGENITAL COLOBOMA OF THE EYELID *

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Cases of congenital coloboma of the eyelid of slight degree, varying from a small notch to a V shaped defect in the lid, are rare. Cases with complete absence of a large portion of the lid are exceedingly rare, and the chance of seeing two such cases and a photograph of a third, within three months, is the occasion of this note.

Fig. 1 (Case 1).—Condition before operation.

CASE 1.—A healthy boy, aged 8, showed no abnormalities of development except those to be described, which had been present since birth. Vision was: right eye, 20/30; left eye, 20/200. As shown in Figure 1, about half the left upper lid was entirely absent, there being no sign of a tarsal plate in the region, no cilia, nor signs of meibomian glands. On the lower, outer part of the cornea and sclera was a large, solid

* From the Department of Ophthalmology, University of Nebraska College of Medicine.

dermoid, which, when the eyes were closed, fitted into the gap in the upper lid. A small, hard nodule was present just above the skin border of the defect. Two similar nodules were present near the left auricle, and the parents stated that a fairly large cyst had been removed from the left cheek. The right eye and eyelids were normal.

At operation, horizontal incisions were made from each side of the defect parallel with the lid border, freeing each fragment of the lid entirely down to the conjunctiva. The external incision was carried well out on the temple, and both angular ligaments were cut so that the fragments could be brought together easily. An incision was made around the defect, and skin and conjunctiva were separated. The conjunctival edges were united by three silk sutures; a mattress suture was placed, carefully apposing the two edges of the lid border, and tied over a gauze roll. The vertical skin defect was closed by mattress sutures, and the horizontal cuts by one continuous

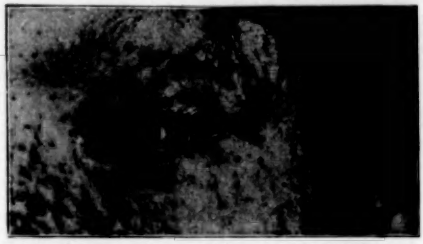

Fig. 2 (Case 1).—Appearance five weeks after operation.

Fig. 3 (Case 2).—Condition before operation.

suture. Tension sutures were placed between the two fragments, relaxing all pull on the skin sutures, and tied over gauze. The stitches were touched with 2 per cent. silver nitrate every day, and at their removal in two weeks union was good. The shadow shown in Figure 2 is not a notch in the lid border, which appears very smooth, but a depression in the skin surface above the border. Though the levator was divided necessarily, the lid can now be raised fairly well. After two weeks the corneal growth was dissected off, enough epithelium being left to be easily pulled over the exposed sclera to the limbus. Fairly clear cornea was found beneath the growth. Sections of the tumor showed it to be a solid dermoid, containing hair follicles, muscle and fat. The cosmetic result is better than expected, though it could be improved by removal of the small nodule which marks the previous border of the defect.

CASE 2.—A girl, aged 19 months, referred to Dr. Harold Gifford by Dr. McPherson of Hastings, Neb., was seen in the same month. The condition of the lid (Fig. 3) was almost the same as in the first case. The whole inner half of the right upper lid was absent, except a very thin inner fragment including the canaliculus. Fairly marked epicanthus was present, and both left canaliculi were absent. Down and out on the sclera in each eye, encroaching slightly on the cornea, were large, soft, fatty tumors resembling the congenital lipomas usually seen on the sclera above the external rectus. On the tragus of both auricles were soft, pedunculated nodules the size of a pea. At the first operation (Dr. Harold Gifford) an attempt was made to close the defect by carefully uniting the edges, using tension sutures, the lateral flaps being freed and the palpebral ligaments divided subconjunctivally. The upper part of the defect healed well and remained closed. In the lower part, however, the stitches did not hold. This part was later closed again, the edges being excised to present a larger raw surface, and healing this time was complete, and the cosmetic result good (Fig. 4).

Fig. 4 (Case 2).—Appearance five months after operation.

CASE 3.—Of the third patient, a baby, aged 11 months, only the photographs, sent to Dr. Harold Gifford by the mother for an opinion, have as yet been seen. They show a coloboma of the upper lid (Fig. 5) almost as large as that seen in the other two cases.

According to Parsons,[1] the theory that best explains these defects, and their frequent association with other congenital anomalies, such as dermolipomas (twenty-seven out of sixty-five cases) is that they are due to amniotic bands. The upper lid is usually involved in its inner portion, as in our cases, but the defect is usually triangular and much smaller. Rare defects of the lower lid, with fissure of the zygoma and other bones of the face, are due to failure of the maxillary and frontal processes to unite.

In operating in these cases and the more frequent traumatic defects that resemble them, the complete free-

Fig. 5 (Case 3).—Appearance of patient while asleep.

ing of both portions of the lid is the essential thing, and this is greatly facilitated by cutting the palpebral ligaments subconjunctivally, which allows a surprising amount of displacement without tension on the sutures. Another point is accurate coaptation of the palpebral borders by a mattress suture, tied over gauze or rubber, so that it will not cut out. A third point is the use of

1. Parsons: Pathology of the Eye ■: 774.

tension sutures. Though skin grafting is naturally thought of, it must be remembered that both an outer and an inner covering must be supplied, with some solid tissue between the two. The only satisfactory source of such materials is a piece of the auricle, but there is always the danger that this will slough, besides the inconvenience of a second far from trivial operation on the auricle, which may, itself, cause some deformity. Morax [2] describes a similar large congenital coloboma which he closed in a somewhat similar way. Union was not successful, however, until a blepharorrhaphy was performed. His case also showed a dermoid of the limbus and pedunculated growths of the auricle, one of which he used in closing the defect left by the sliding flap from the temple.

HEMATOGENOUS INFECTIONS OF THE SEMINAL DUCT

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The frequency of gonococcus infections of the seminal duct has long dominated our conception of epididymitis and vesiculitis, which are commonly assumed to arise by invasion from the urethra only, and to interest merely urologists. That these organs are infected by parasites floating in the blood also has in recent years attained an importance demanding recognition by clinicians in general.

Three items in the physiology of the seminal ducts are recalled: 1. The epididymis, which is by derivation the kidney of the cold-blooded animals (Fig. 1), may, like its successor the mammalian kidney, excrete the virus of the blood infections; epididymitis is a known feature of tuberculosis, syphilis, typhoid fever, malaria and influenza; and in the inflamed epididymis have been identified all the pathogenic organisms known to be excreted by the kidney.

Fig. 1.—Human testis and epididymis: The rete testis (*c*), efferent tubules (*d*), head (*e*), body (*f*) and tail (*g*) are derivatives of the kidney of cold-blooded animals and of its duct, and the seat of hematogenous infections. (From Quain.)

2. The contents of the epididymis, abnormal as well as normal, pass through the vas deferens and accumulate in the seminal vesicles as the urine accumulates in the bladder; and in the vesicles many bacteria find an environment suitable for multiplication.

3. The seminal vesicle, like all other sacs and tubes enclosed in smooth muscle, exhibits automatic peristalsis, whereby its contents are intermittently passed into the prostatic urethra and thence into the bladder (Fig. 2).

Parasites entering the seminal duct from the blood may, therefore, contaminate the urine in the bladder. For example, a recent typhoid epidemic in Portland, Ore., comprising twenty-six cases with five deaths, was traced to a man employed as a milker in a certain dairy, whose urine contained typhoid bacilli, though none were detected in the feces, and no definite history of typhoid was obtained.[1] Dr. H. W. Howard [2] was requested to make a urologic examination, and by massage of the vesicles brought to the meatus a fluid in which typhoid bacilli were identified by smear and culture. Urine from the kidneys secured by the ureteral catheter was by culture found sterile. After daily massage of the vesicles for two weeks, a specimen of bladder urine was found to be sterile.

Infection of the seminal duct by *Endameba histolytica*, the causative agent of tropical dysentery, has been recently discovered in three subjects; in the first,

Fig. 2.—Vesicles filled with collargol solution by vasotomy; roentgenogram made three days after filling and a half hour after the bladder had been irrigated: *A A*, vesicles; *B*, collargol solution in the bladder expressed from the vesicles by peristalsis.

two and one-half hours after death from pneumonia, by Warthin.[3] Serial sections showed the amebas most numerous in the head of each epididymis, the number decreasing in the tail and vas deferens and in the rete testis; none were found in vesicles or prostate. Apparently only epididymectomy could have saved the testis from destruction in this case, as it has often done in tuberculosis of the epididymis. In 1923, Hines [4] of Chicago recorded the first observed case of endameba in the seminal vesicles during life; the urologic examination was made by Dr. C. M. McKenna, who expressed from the vesicles a fluid containing endamebas. In urine from the kidneys obtained by the ureteral catheter, none were found. In February, 1925, a man was treated for tropical dysentery by Dr. C. S. Williamson of Chicago until the amebas were no longer found in the stools. Twelve hours after the patient left the hospital, a painful swelling of the epididymis developed, soon extending up the spermatic cord to the inguinal canal, because of which he consulted me. Massage of the vesicles abated the pain, and expressed fluid contained *Endameba histolytica;* this finding was verified by Prof. J. P. Simonds of Northwestern University Medical School. As this parasite is endemic in our Gulf states and not rare farther north, these three cases have clinical interest for all.

The chief import of these findings, however, is that the seminal duct—epididymis and vesicle—must be recognized as a possible carrier of parasites derived

2. Morax: Ann. d'ocul. **126**: 374, 1901.
1. Sears, H. J.; Garhart, R. W., and Mack, D. W.: Am. J. Pub. Health **14**: 848 (Oct.) 1924.
2. Howard, H. W.: Personal communication to the author.

3. Warthin, A. S.: J. Infect. Dis. **30**: 559 (June) 1922.
4. Hines, L. E.: Endameba Histolytica in Seminal Fluid in a Case of Amebic Dysentry, J. A. M. A. **81**: 274 (July 26) 1923.

from the blood, even when these are undetected elsewhere in the body. The Portland typhoid carrier doubtless had at some time *Bacillus typhosus* in the stools; yet when discovered in the vesicles, they were no longer found in the dejecta. Similarly, each of the three subjects in whom the endameba was found in epididymis or vesicles had received treatment for recognized amebiasis of the intestine until the parasites were no longer detected by repeated examination of the stools; indeed, Warthin found none in the bowel post mortem. Apparently, emetin and quinin, as usually administered, may eradicate this parasite from the bowel but not from the seminal duct. From such foci may come the usual recurrent infections of the bowel. That epididymis and vesicle may long remain the only discoverable (though not the primary) focus of the tuberculous infection also is well known.

There are recorded many instances of acute hematogenous infection of epididymis and vesicle by the common organisms, such as Kocher's and Gruber's [5] cases of fatal staphylococcus abscesses in the lungs, each with an epididymis and vesicle full of pus, while testis, prostate and urethra were free from infection; and Keyes'[6] patient with fulminating epididymitis and consequent gangrene of the testis, from *Bacillus coli* infection.

The chronic infections of the epididymis, other than tuberculous, are more numerous but less conspicuous than the acute, and have been but little studied. Yet pus cocci and other bacteria known to be sometimes carried by the blood from infected tonsils and other foci have been found with pus in the thickened and tender head of the epididymis [7] (invasion from the urethra reaches the tail of this organ first). Some of these seem to entail no injury except pain, so-called neuralgia of the testis, or hydrocele; some seem responsible for persistent infection in chronic vesiculitis and prostatitis,[8] and for damage to the testis. Since they regularly occlude the minute tubules composing the epididymis,[9] this organ may be removed without the reproach of causing unilateral sterility, when such removal is indicated for the preservation of the testis or for the cure of chronic vesiculoprostatitis or hydrocele. That chronic epididymal abscesses may be the source of remote lesions, as those of the vesicle are known to be, seems plausible, though as yet this has not been proved.

Evidently the investigation of epididymis and vesicle and of the latter's contents should be included in every comprehensive clinical and postmortem examination.

31 North State Street.

5. Gruber, G. B.: München. med. Wchnschr. **58**: 1014 (May 9) 1911.
6. Keyes, E. L., Jr.: Urology, 1917, p. 569.
7. Belfield, W. T.: Tr. Am. Urol. A. **3**: 13, 1909.
8. Cumming, R. E.: Urol. & Cutan. Rev. **28**: 65 (Feb.) 1924.
9. Kretschmer, H. L., and Alexander, J. C.: J. Urol. **10**: 335 (Nov.) 1923.

Mortality of Cancer.—The deaths from cancer of the stomach are rapidly increasing. In England and Wales there were 7,078 in 1919 and 8,135 in 1921. Very few of these patients ever come to the surgeon; many do not see a physician or even their general practitioner until it is too late to operate. This is partly due to the fact that gastric cancer is frequently a terminal disease in old people, for more die of this condition between the ages of 60 and 70 than in any other decade, so that the early symptoms are often overlooked or thought to be the natural result of old age.—Rowlands, R. P.: *Brit. M. J.* **1**:587 (March 28) 1925.

RUPTURE OF MUSCLES AND TENDONS

PARTICULARLY SUBCUTANEOUS RUPTURE OF THE BICEPS FLEXOR CUBITI *

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A review of the literature reveals that comparatively little has been written in English on the important subject of rupture of muscles and tendons. It is barely mentioned in American or English textbooks on surgery. A number of lengthy articles with complete case reports are to be found in the French and German literature, especially the latter. The fact that these accidents occur more frequently than is generally supposed and that the condition is usually undiagnosed or diagnosed incorrectly, resulting in valuable loss of time before operation, is my reason for presenting this subject. I refer particularly to complete muscle or tendon ruptures. Incomplete ruptures or tears, with more or less interruption in the continuity of the muscle or tendon, occur even more often.

Fig. 1.—Tumor in lower third of arm characteristic of rupture of upper end of biceps.

According to Loos,[1] Pettit, in 1722, was the first to report a case of rupture of a muscle. Chamseru, in 1781, was the first to write a treatise on the subject. In 1838, Picart reported a rupture of the proximal end, and in 1842 Storks reported one of the distal end of the biceps, both found at necropsy. In 1880, 160 years later, von Regeard in a thesis collected a series of 132 cases, eight of which were of the biceps. In 1882 Madyl [2] reported 230 cases; twenty-seven, or 11.2 per cent., were of the biceps. Loos, in 1901, collected reports of sixty-two cases of the biceps. In 1907, Wolf [3] added eleven more; in 1907, Wydler [4] two; in 1923, Ludington [5] one, and my case brings the total number reported in the literature to eighty-one. It is interesting to note that only fifteen of these eighty-one

* From the department of surgery, University of California Medical School.
* Read before the Western Surgical Association, French Lick Springs, Ind., Dec. 5, 1924.
1. Loos: Beitr. z. klin. Chir. **29**: 410, 1900.
2. Madyl: Deutsch. Ztschr. f. Chir. **17**: 306.
3. Wolf: Beitr. z. klin. Chir. **55**: 496, 1907.
4. Wydler: Ein Beitrag zur Frage der Ruptur des Biceps Braechii, Cor.-Bl. f. schweiz. Aerzte, 1917, p. 47.
5. Ludington, N. A.: Rupture of the Long Head of the Biceps Flexor Cubiti Muscle, Ann. Surg. **77**: 358 (March) 1923.

reported cases have come to operation. We have had three cases of rupture of muscles at the University of California Hospital, and Dr. Henderson of the Mayo Clinic was kind enough to look up statistics there which revealed seventeen cases, six of which were of the biceps.

The order of frequency of rupture of muscles and tendons I believe to be: Achilles tendon, extensor quadriceps; biceps and triceps of the arm; rectus abdominis, supraspinatus and the adductors of the thigh, trapezius, pectoralis major and minor.

ETIOLOGY

It is believed by many that senility is a potent factor in production of this lesion. If that be granted, it is indicative of a degenerative change or disease of these muscles or tendons. Naturally with increasing years the elasticity and resiliency of the muscles lessen. But it occurs not infrequently in well developed muscular youths and young men during a movement of not unusual severity.

Excessive fatigue, perhaps, is a factor, as it renders the muscular fibers less likely to resist a sudden and forceful pull or jerk.

There can be no further question that disease plays an important rôle in many cases. Ledderhose [6] has brought out clearly by his necropsy findings that arthritis deformans is a very definite predisposing factor in producing these ruptures, particularly of the biceps. He states that "it appears frequently and early in the neighborhood of the sulcus, and spreads rapidly to the tubercles and sets up a chronic inflammation proceeding in the tendon sheath, and this leads to adhesions, a flattening and thinning, and finally a raveling out of the tendon." It may be so insidious that the patient does not realize when the severance or rupture has taken place. Besides arthritis deformans, acute infectious diseases, syphilis and arteriosclerosis should be kept in mind. A case has been reported of a patient rupturing both biceps muscles in a convulsive seizure.

The muscles ruptured depend somewhat on the occupation. Rupture of the neck muscles usually occurs in load carriers and packers, of the biceps and triceps in pitchers and lifters, of the adductors of the thigh in horseback riders, of the calf muscles in boxers, tennis players, runners and mountain climbers, of the extensor pollicis in drum players, and of the back muscles in stevedores.

6. Ledderhose: Deutsch Ztschr. f. Chir. 171306.

MECHANISM

The mechanism that produces a rupture of a muscle or tendon is very interesting. The break always takes place when the muscle is in strong contraction and a group of antagonistic muscles is brought into action. It evidently occurs when there is a lack of coordination or muscular balance, and when a sudden unexpected movement or muscular adjustment takes place. Often a distinct snap is audible.

The snapping of a contracted muscle is well illustrated by two cases reported in 1918 by Wilson Davidson,[7] who has discussed them with me recently. In each case, the man was a cavalryman who, while riding, was holding the adductor muscles of the thigh in tight contraction, when by a jump of the horse the rider's thigh was thrown against the pommel of the saddle, rupturing in one case the adductor longus, and in the other the adductor brevis.

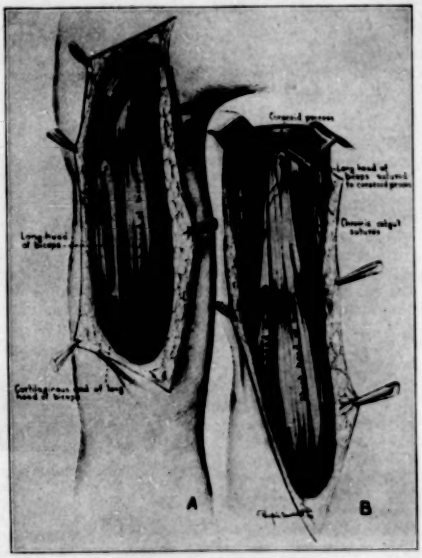

Fig. 2.—*A*, Condition found in operation which shows the long head of the biceps torn off from the cartilaginous lip of the glenoid completely turned over in a jack-knife fashion; *B*, long head of biceps sutured to coracoid process and fortified to upper fibers of the short head.

Dr. Davidson has told me also of a baseball pitcher who, in the instant of releasing the ball, heard a snap, and felt a sharp pain in the lower third of the arm. An examination revealed a complete rupture of the triceps at the junction of belly and tendon. Montgomery [8] of Chicago has reported a case of rupture of the triceps in which operation was performed by Dean Lewis. In this case, a heavy truck backed into the man, and he attempted to fend it off, but the tail board caught his left arm and ruptured the triceps.

The Achilles tendon has been ruptured by tennis players, and Dr. Hobdy has told me of a young athletic director who ruptured this tendon while giving a boxing lesson. It occurred just at the moment when he stepped back to ward off a blow. The foot was in extreme dorsiflexion, and the Achilles tendon taut. He felt a sharp pain in the calf of the leg and fell to the ground. At operation the tendon was found completely ruptured, with ragged edges an inch above its insertion.

Dr. Righetti has brought to my attention an Indian enlisted man in the army, who ruptured the right rectus abdominis while doing a broad jump. The case was at first diagnosed as acute appendicitis and the patient was operated on. A rupture of the rectus muscle was found at the junction of the middle and lower third.

Behan [9] has reported a similar case. It occurred in a woman who, while lifting a heavy window, suddenly

7. Davidson, W. T.: Rider's Tendon, Rupture of the Adductor Tendons of the Thigh, Surg., Gynec. & Obst. 26:192 (Feb.) 1918.
8. Montgomery, A. H.: Two Cases of Muscle Injury, S. Clinics, Chicago 4:871 (Aug.) 1920.
9. Behan, R. J.: Rupture of the Rectus Abdominis Muscle, Boston M. & S. J. 182:660 (June 24) 1920.

gave it a jerk and felt a sharp sudden pain in the region of her right abdominal muscle. The pain persisted for several days and was most noticeable on coughing. When at rest, she had no pain. A diagnosis of acute appendicitis was made at two hospitals, and operation for the relief of it was advised. As she had no fever or vomiting, she did not concur in the diagnosis. Behan made a diagnosis of rupture of the rectus abdominis and confirmed it at operation.

Dryland [10] has reported a case of rupture of the quadriceps. It occurred in a woman, aged 62, who, while going down stairs, slipped and, after making a violent effort to regain her balance, fell to the floor. At operation a complete rupture was found 1 inch above the patella.

Many cases treated under the caption of sacro-iliac sprain or lumbago, I believe, are really partial rupture of some of the deep back muscles or their fascia.

SUBCUTANEOUS RUPTURE OF THE BICEPS FLEXOR CUBITI

The literature reveals that these cases are frequently overlooked, and the patient is treated often for a sprain or a simple hematoma, for an abscess or for rheumatism. The history of the cases reveals that the patients usually go from one physician to another in order to see whether something more cannot be done to strengthen the arm. Few are diagnosed early. Dr. Emmet Rixford told me that he had never seen a recent case, as they had all been referred to him late, after considerable atrophy had occurred, and when it was impossible to obtain an entirely satisfactory result.

The site of the rupture may be at any four points; namely, in the muscle substance itself, at the junction of the muscle and tendon, in the tendon, or at the origin or insertion of the tendon to the bone. According to most writers, about 66 per cent. are believed to occur in the muscle substance. This estimate can be only theoretical as so few cases really have come to operation. Loos believes that 43.6 per cent., or almost half, occur at the junction of the muscle with the tendon of the long head; 21.8 per cent., partial of muscle; 15.1 per cent., total of muscle; 19.5 per cent., long head. He states that if the rupture occurs in the tendinous portion, it is always in the long head and never in the short head.

SYMPTOMS AND SIGNS

The patient may or may not feel a sharp pain in his arm, shoulder or elbow. Some hear a sharp snap resembling a pistol shot, which may be audible several feet away. Nearly all complain of a progressive weakness in the use of the arm, with very little discomfort, often thinking they are affected with rheumatism. Many of the cases have been treated as a contusion or strain by the application of fomentations, liniments and electricity. If the rupture is at the upper end of the biceps, a swelling can be seen at the lower end of the arm; if it occurs at the lower end, the biceps enlargement is seen, of course, higher up. This swelling may not attract the patient's attention. Occasionally this swelling has been mistaken for an abscess and even incised. A hiatus can sometimes be observed between the ruptured portions. A notch may be felt. The torn ends can seldom be palpated. In the hiatus usually the humerus can be felt beneath the skin.

A tear or partial rupture can be diagnosed as a soft oval small swelling, which during contraction of the muscle changes its position and becomes harder. If the cause is a direct one, such as a blow over the region of the muscle, ecchymosis appears.

DIAGNOSIS

The diagnosis should not be difficult, if the condition is only kept in mind, yet a majority of the cases reported in the literature have been overlooked for weeks, months or years. Our suspicion of a ruptured muscle or tendon should immediately be aroused when a person complains of having felt a sharp pain during a forceful muscular act, if a tumor exists over the muscle, and if the arm is decidedly weaker than the other. Alexander [11] has emphasized these points: "A bulging of the biceps at a point nearer the elbow than normal, a flabby condition of part (or all) of the muscles, an abrupt termination of the bulging above and an inability to feel the tendon above that point, all indicate a rupture of the muscle or tendon."

Because of the rich blood supply of muscles, tears or ruptures in them usually produce considerable bleeding with subsequent hematoma more noticeable during contraction; with rupture of the tendon, this is absent or slight.

In recent injuries, it is necessary to distinguish between contusion with hematoma with or without rupture. In older cases, one should consider the probability of a tumor.

Differential diagnosis between hernia of the muscle and a partial rupture or pseudohernia is that the hernia disappears with digital pressure over the hernia, but becomes more pronounced when pressure is made around it.

HÜTER'S SIGN

Hüter has given these points for the diagnosis of a rupture of the biceps, and it is generally known as Hüter's sign: Flexion of the forearm in pronation when the biceps is tense is more forcible than when the forearm is supinated and the biceps relaxed.

COMMENT

Ludington believes that cases can be classified in two ways—from an etiologic or from a pathologic standpoint. "Etiologically," he says, "they are either spontaneous or traumatic. Pathologically, the site of rupture is either in the bicipital groove or outside the groove. Those cases in which the rupture is in the groove are spontaneous, and those in which the site of rupture is without the groove have a history of trauma."

He adds that "if further observation shall support the foregoing, and two sites of rupture shall come to be recognized as having distinct etiologic and pathologic bases, then the clinical recognition of the site of rupture will have, in addition to its academic interest, the further value of aiding in establishing the rights of the parties at interest in those cases which come within the domain of the workmen's compensation laws."

TREATMENT

If the rupture is complete or nearly so, an operation should be performed without delay. Even an exploratory incision under local anesthesia can do no harm and may later prevent embarrassment to the attending surgeon. If the long head is ruptured at its attachment to the lip of the glenoid or near its upper end, four different methods have been carried out: (*a*) suture of the

10. Dryland, L. W.: Rupture of Quadriceps, Brit. M. & S. J., 1922, p. 3219.

11. Alexander: Ann. Surg. 61: 1915; Rupture of Biceps with Report of Eight Cases, M. & S. Rep. Epis. Hosp., Philadelphia 3: 108-117, 1916.

tendon to the short head of the biceps (Bazy); (*b*) suture to the coracoid process (Perthes); (*c*) suture to the pectoralis major (Hoffman), and (*d*) suture in the sulcus intertubercularis (Roloff [12]). I believe that in most instances it will be found easier and safer, and will hold better if the two methods *a* and *b* are combined as I combined them in the case reported below. The tendon of the long head of the biceps was slipped through a portion of the short head near its attachment to the coracoid. It was then fastened to the coracoid process, and the fixation was fortified by two sutures in the tendon of the short head, where it had emerged, as is shown in Figure *2 B*.

For tears, active exercise is the best massage. Rest and movement are both important healing factors, each in its place.

In all cases, the period of convalescence will be shortened by physiotherapy consisting of exposure to radiant light and heat, and manual massage to hasten repair and prevent adhesions. Passive movement should be carried out after the third week, and active after the fourth.

REPORT OF CASE

A man, aged 58, while lifting with a co-worker a heavy band weighing about 100 pounds, with his hands and fingers extended, suddenly felt a sharp pain in his right shoulder, and remarked to his comrade that he thought he had dislocated it. When he called at my office about an hour later, a very definite swelling was seen in the lower third of the arm, and a hiatus felt above this. There was pain along the course of the short head of the biceps. A diagnosis of rupture of the long head of the biceps was made. The general examination was negative, as was the past history. At operation, the long head was found to have been torn off from its cartilaginous attachment on the glenoid margin.

I have been able to find but two similar cases in the literature, and these were Da Costa's, reported by Keen,[13] and Wydler's, reported from the de Quervain clinic in Switzerland. The case I report differed from those in that the ruptured or upper end turned completely over in a jack-knife fashion, and was found down in the arm near the elbow, as shown in Figure *2 A*. It is usually found waved like a letter "s" or twisted on itself.

SUMMARY

1. Partial rupture (tears) and complete ruptures of muscles and tendons occur much more frequently than is usually supposed.
2. Most cases have been undiagnosed for weeks, months or years, or incorrectly diagnosed.
3. The diagnosis is not particularly difficult.
4. The treatment is surgical, and if taken in time the prognosis is good.

Fitzhugh Building, Union Square.

12. Roloff: Deutsch. Arch. f. Chir. **100**: 614.
13. Keen: Ann. Surg. **41**: 756 (May) 1905.

Plaster of Paris for Fractures.—Let me give a word of warning against the growing tendency of the immediate application of plaster of Paris. It assumes the immediate and complete reduction of a fracture, which is not always possible. It prevents the intelligent use of pads, and does not allow of inspection and supervision. Unless applied by an expert, it often tends to interfere with the vitality of the limb because of circular compression. If put on a limb newly injured, it will become slack as soon as the swelling subsides. It does not permit of massage, so often necessary to hasten recovery. A badly applied plaster often proves a very dangerous splint, and is a common cause of nonunion and of pressure sores.—Jones, Robert: Crippling Due to Fractures, *Brit. M. J.* **1**:909 (May 16) 1925.

Clinical Notes, Suggestions and New Instruments

PRIMARY TUBERCULOSIS OF BARTHOLIN'S GLAND*

J. Whitlock Gordon, M.D., Detroit

Tuberculosis has been reported of every organ in the body. But Bartholin's gland seems to have been evaded by the bacillus with great persistence. So far as I am aware, only three cases have been reported to date, two by Nogues[1] in 1906, and one by Lecene[2] in 1909. The condition, therefore seems rare enough to warrant a report in full.

REPORT OF CASE

Mrs. A., aged 24, was seen, Dec. 7, 1923, complaining of a small nodule over the region of Bartholin's gland, which was quite painful and which had a small sinus about the size of a pin point, from which came a thin, watery discharge. The patient also complained secondarily of backache and sterility since her child was born five years before. The family history was negative for tuberculosis. She had had the usual diseases of childhood, whooping cough at 5 years, and measles at 7 years. She had had no serious illnesses of adult life; no previous operations, and no serious accidents. At the age of

Fig. 1.—Appearance before operation.

14 the patient began menstruating. The periods were always regular, were of the twenty-eight day type, lasted about four days, and caused considerable pain. Blood clots were absent. At 16 the patient was married. There were three miscarriages at from about two to three months' gestation, none of which were induced. These were followed by a normal spontaneous birth of a boy. Since the birth of this boy, the patient had never become pregnant but had had considerable backache and a sensation of fulness in the rectum, intercourse being extremely painful.

* Read before the Obstetrical and Gynecological Society, Harper Hospital, Detroit, Jan. 6, 1925.

1. Nogues: Ann. d. mal. d. org. gen-urin. **18**: 421, 1906.
2. Lecene, P.: Ann. de gynec. et d'obst. **6**: 77, 1909.

The patient weighed 110 pounds (50 kg.) and was about 5 feet, 1½ inches (156 cm.) tall. The eyes reacted to light and in accommodation. The tonsils were small. There were no purulent follicles. The teeth were very good. The gums were in good condition. The thyroid was not enlarged. There was no cervical glandular enlargement.

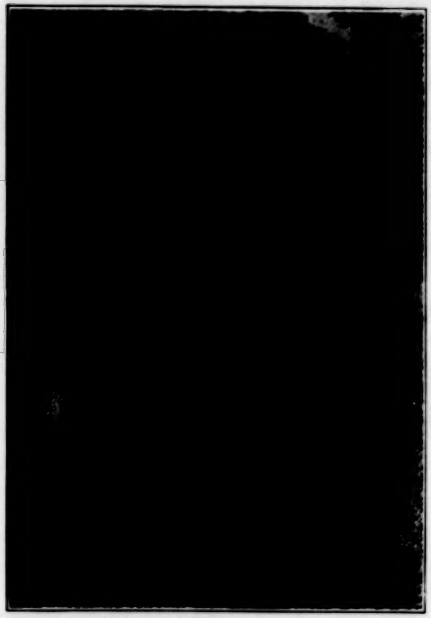

Fig. 2.—Section under low power.

The heart was not enlarged. It was regular, strong, and presented no murmurs. The lungs showed clear vesicular breathing everywhere on auscultation.

The abdomen was soft throughout, except for slight rigidity over the region of the appendix. The liver was not enlarged. The spleen was not palpated. There was no tenderness over either kidney region.

The vaginal examination showed a marital outlet slightly relaxed. The cervix was considerably larger than normal, with a slight laceration on the right side. The fundus was in a third degree retroversion, and was painful to palpation. This tender fundus in the culdesac proved to be the cause of the painful intercourse and also the sterility.

On the left labium minus was a nodule over the site of Bartholin's gland, with a small pinhole sinus from which a thin watery discharge could be extruded. This tender nodule extended about 1½ inches (38 mm.) deep and one-half inch (13 mm.) posterior and 2 inches (50 mm.) anterior to the nodule.

The blood Wassermann reaction was negative. The urine was negative for albumin and sugar. A cervical smear showed extracellular diplococci.

The blood count showed 4,400,000 red cells; 7,500 white cells, with a differential count of 60 per cent. polymorphonuclears, 30 per cent. small lymphocytes, 2 per cent. transitionals, 2 per cent. eosinophils, and no poikilocytosis or anisocytosis.

After operation, a Piquet test was negative.

The case was diagnosed as one of Bartholin gland abscess with a retroverted uterus, and the patient was sent to the hospital for operation. A ventral suspension and appendectomy were performed. The tubes looked slightly grayish, but we felt sure that that was due to the distorted blood supply. They were both entirely patent, and no adhesions were found. The intestines looked perfectly normal. The gallbladder was normal to palpation and emptied easily. There was no evidence of tuberculosis in the abdomen. At vaginal operation the uterus was not curetted. The small nodule was grasped firmly with forceps, whereupon a thin, watery pus extruded in all directions.

The nodule and gland and débrjs were removed by dissection, which extended about 1½ inches deep, 1½ inches anterior and one-half inch posterior. One small piece of iodoform gauze was inserted in the cavity. The specimen was sent to the laboratory, and Dr. Plinn Morse reported chronic tuberculosis of Bartholin's gland.

Two weeks after operation, an attempt was made to demonstrate an acid-fast organism from the old site of Bartholin's gland, but with no success.

Three weeks after operation, the patient's chest was roentgenographed by Dr. William Evans. There was no frank parenchymal involvement of either lung, although there was extensive infiltration about the roots of the lungs, with some increase in the peribronchial tissue in the right upper lobe at the level of the second, third and fourth interspace regions. The extensive root infiltration could be secondary to an upper

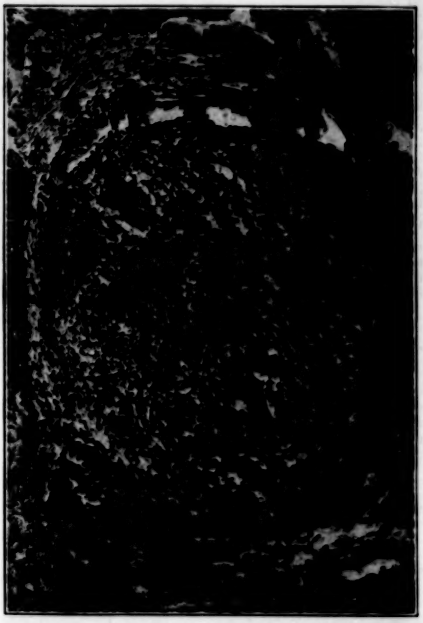

Fig. 3.—Section under high power.

respiratory passage infection, as from the tonsils, teeth or sinuses.

Two months after operation, the site of the Bartholin gland was practically healed.

Three months after operation, the patient returned to the office and was found two months pregnant.

Ten months after operation the patient was again examined, and the tuberculous site was entirely healed and no discharge was present. She had had a miscarriage at about three months, which she stated was not induced.

At her last visit to the office, about twelve months after operation, she was in excellent health and had gained about 14 pounds (6.4 kg.).

CONCLUSIONS

This case is reported as primary tuberculosis of Bartholin's gland because careful examination, including exploration of the abdomen and roentgen-ray examination of the chest failed to reveal any other evidence of the disease. In my opinion, the number of cases of tuberculosis of Bartholin's gland would be much more frequent if looked for.

950 David Whitney Building.

BIPLANE FLUOROSCOPY IN THE TREATMENT OF FRACTURES: NEW RADIOLUCENT FRACTURE STRETCHER AND NEW SURGICAL ROENTGEN-RAY UNIT *

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Roentgenologist, Hospital for Joint Diseases

The advantages of simultaneous biplane fluoroscopy in the treatment of fractures is apparent to those experienced in this type of work. To be able to manipulate fragments of a fractured bone, while the limb is in an extension and retention

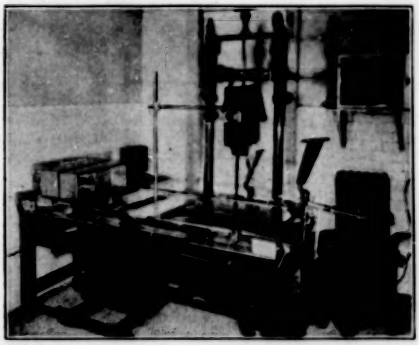

Fig. 1.—Fracture stretcher in position on the roentgen-ray table.

device, and to be able, at any time within a few seconds, to fluoroscope or roentgenograph the bones in two planes, one at right angles to the other, approach the ideal in the treatment of fractures.

To attempt to fluoroscope or roentgenograph a broken bone, in more than one plane, with the patient on a Hawley, Albee or Oppenheimer fracture table, is to invite the keenest disappointment. The construction of these fracture units does not permit such procedures with any degree of success. The extreme weight, the bulkiness and the radiopacity, as well as the dangers of high tension shock, discourage any consistent attempts in this direction. For this reason, I started work on apparatus about three years ago, which at the present time has reached a stage of perfection truly gratifying. It is now possible to treat a fracture of any extremity on a fracture table with most of the advantages of the standard fracture tables, and to fluoroscope or roentgenograph the part in two planes perpendicular to each other, simultaneously, if desired.

The apparatus consists of two separate units, the fracture stretcher and the roentgen-ray unit, which will be described separately.

The fracture stretcher is, as its name implies, a stretcher with a tubular frame. All the accessories are movable on the frame, and can be attached to any part of it. At the corners of the stretcher are four special devices which permit

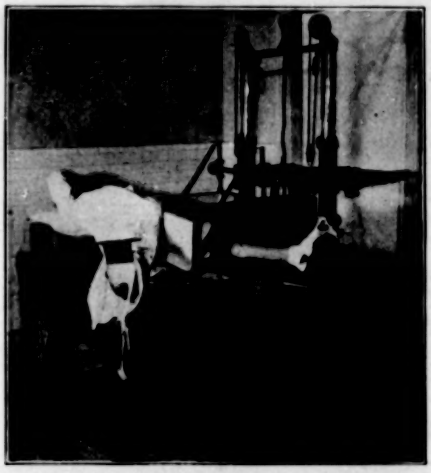

Fig. 2.—Traction devices arranged for the treatment of fracture of the lower extremity, with biplane fluoroscopy.

the stretcher to rest evenly on any flat surface or to be fastened to the top of a Potter-Bucky table or ordinary roentgen-ray table. Near the middle of the stretcher is a collapsing stretcher top which bears the weight of the patient

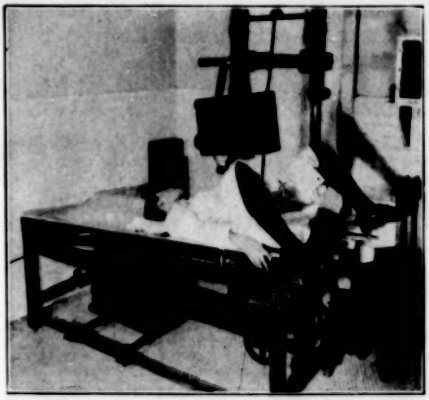

Fig. 3.—Unit adapted for urologic work.

during the preliminary procedures. This collapses simply, on the disengagement of a transverse rod, leaving the hip rest in its original position to support the body weight (Fig. 1). The body support can be moved to any part of the stretcher.

* Presented before the Orthopedic Section of the New York Academy of Medicine, Feb. 20, 1925.

The same applies for the two accessory body supports, so that the supports can be arranged conveniently for upper or lower extremity fracture work. In addition, the hip rest may be placed transversely, thus becoming a shoulder rest, facilitating fracture work in the upper extremity.

The extension and traction devices present no radical departure from the previous types except in one respect. They do not work from a central pivot, but are attached to any desired part of the frame or an extension of it. Traction upward is provided for by detachable accessory parts, which fit over the hip or axillary uprights.

The stretcher is made of aluminum, and is radiolucent in all parts within the frame. It is light, less than 50 pounds in weight, and easily transported to roentgen-ray operating rooms or anywhere, even in ambulances, while the parts are securely immobilized in the adjustable mechanism. It can be used as a fracture table entirely independent of roentgen-ray machinery or in conjunction with roentgen-ray apparatus as described.

The new roentgen-ray unit presents several radical departures from present day apparatus. It consists essentially of two separate oil immersed roentgen-ray plants incorporated with a Potter-Bucky table. One unit is underneath the table on rails in such a way as to be easily moved under any part of the table. The other unit is suspended from two upright bars at the back of the table. It is constructed so as to enable the operator to place this unit at any place over or behind the table and to point it in any desired direction. The Potter-Bucky diaphragm is on rails and can be easily moved. The upper roentgen-ray unit is suspended in such a way that any angle or position is obtainable with it, and when not in use it can be pushed back, entirely out of the way, between the two uprights.

Each roentgen-ray unit consists of an oil immersed transformer and tube capable of a 5 inch gap and 30 milliamperes. The apparatus is absolutely shock proof. The operator or patient can touch the roentgen-ray units, or any part of the apparatus, without experiencing the slightest perceptible shock. The oil immersed apparatus thus provides this tremendous advantage, particularly suited for this type of work. No high tension dangers exist. The control cabinet is at the right of the table, and permits, by simple controls, the operation of either unit independently, or the two simultaneously.

Figure 1 shows the fracture stretcher in position on the roentgen-ray table. The stretcher top is collapsed, with the hip rest in position for support of the patient. The traction devices are arranged for the treatment of a fracture of the lower extremity. Figure 2 shows a patient suspended on the fracture stretcher. A double fluorescent screen, which folds over on itself like the covers of a book and can be swung out of the way when not in use, is attached to the upper transformer. The vertical screen is irradiated by the upper roentgen-ray unit, and the horizontal one by the roentgen-ray unit under the table. The Potter-Bucky diaphragm is displaced to the other end of the table, out of the way. In this way biplane fluoroscopy is agreeably feasible, almost instantaneously, at any stage of the reduction or immobilization of a fracture.

In adapting the apparatus for the treatment of a fracture of the upper extremity, what has previously been described as the hip rest is adjusted transversely and now supports the shoulder and adjoining parts of the back. The hip upright now becomes the shoulder upright, the combination permitting manipulation and application of plaster without any interference. The upper roentgen-ray unit can be rotated in the direction of the vertical screen. The horizontal screen is irradiated by the transformer under the table, which has been rolled into position. In a few seconds the screens as well as the upper roentgen-ray unit can be pushed out of the way. Thus, it is also possible to manipulate and immobilize fractures of the upper extremity under direct biplane fluoroscopic guidance. It should be mentioned that each screen has a tunnel attachment for a film cassette, so that, with very slight additional trouble, roentgenograms can be secured.

It is quite obvious that the apparatus presents advantages applicable to other surgical and diagnostic procedures. Biplane fluoroscopy is particularly desirable in the removal of foreign bodies, in the lungs as well as elsewhere.

The machine has also been especially adapted for urologic work. A crank is visible in the lower right corner of the table which enables the operator to elevate or depress one end. Figure 3 shows the unit adapted for urologic work. The table is tilted, and the diaphragm is brought into position for roentgenographic work. Stirrups are provided at the end of the table. If desired at any stage of the examination, fluoroscopy can be resorted to by displacing the Potter-Bucky diaphragm and getting the roentgen-ray units into position, using the screens as described previously.

The apparatus can and has also been used with the utmost satisfaction with a flat top for ordinary roentgenographic purposes, but it is especially designed for and will prove highly satisfactory as a distinct advantage in such surgical procedures as have been described.

9 West Sixty-Eighth Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

POLLENS DRIED-MULFORD.—The dried pollen of various species of plants.

Actions and Uses.—See Allergic Protein Preparations, New and Nonofficial Remedies, 1925, p. 278.

Dosage.—Pollens dried-Mulford are intended for diagnosis only. A small amount (about 0.002 Gm.) of the dried pollen is rubbed into an abrasion of the skin to which has been applied a drop of physiological solution of sodium chloride or of tenth-normal sodium hydroxide solution. An urticarial wheal, with or without a surrounding area of redness, appearing within a half hour from the time of application indicates a sensitiveness to the particular pollen used.

Pollens dried-Mulford are marketed in packages of one capillary tube containing a sterile needle and sufficient pollen for one test; in packages of six capillary tubes each containing a sterile needle and sufficient pollen for one test, and in vials containing 0.05 Gm. of pollen.

Manufactured by the H. K. Mulford Company, Philadelphia. No U. S. patent or trademark.

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TYPHOID VACCINE (See New and Nonofficial Remedies, 1925, p. 360).

Parke, Davis & Co., Detroit.

Typhoid Vaccine (Prophylactic).—(See New and Nonofficial Remedies, 1925, p. 363.) Also marketed in packages (*Bio. 429*) of thirty ampules, ten containing 500 million, and twenty containing 1,000 million killed typhoid bacilli each.

Typhoid-Paratyphoid Vaccine (Prophylactic).—(See New and Nonofficial Remedies, 1925, p. 363.) Also marketed in packages (*Bio. 440*) of thirty ampules, ten containing 500 million killed typhoid bacilli, 375 million killed paratyphoid A and 375 million killed paratyphoid B bacilli, and twenty containing 1,000 million killed typhoid bacilli, 750 million killed paratyphoid A and 750 million killed paratyphoid B bacilli.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 13, 1925

THE ANATOMIC FEATURES OF ESSENTIAL HYPERTENSION

Recently the professor of physiology of the University of Bern, Dr. Leon Asher, made a journey to the United States, and on his return published his "impressions."[1] As a physiologist, he was particularly delighted with the predominant place of experimental methods in American medical education, and he quotes "one of the foremost American pathologists," who told him that pathologic anatomy is dead in America. Possibly this demise of one department of medical science has been prematurely reported. Granted that pathologic anatomy in the most restricted sense, as the end and sufficient goal of a section of the medical faculty, is seldom accepted as the complete life work of American pathologists, nevertheless there is still much activity in the study of purely anatomic problems, both in the mortuary and in the microscopic laboratory. It is fully appreciated by most pathologists not only that pathologic anatomy has many problems to solve that are still of interest, but also that its function of adding to our knowledge of clinical medicine is far from completed.

There has become available at this time an excellent example of what pathologic anatomy can add to our understanding of a subject that has been largely investigated by chemical and experimental methods. The study of Fishberg[2] on the anatomic findings in essential hypertension concerns a disease whose frequency was disclosed by the clinical application of the physiologist's methods of studying blood pressure, and whose distinction from nephritis rests largely on chemical analyses of the blood. Despite the many studies that have been made by these and related methods, however, we have not advanced, in respect to our understanding of the nature of hypertension, far beyond the hypothesis formulated in 1872 by Gull and Sutton, that the disease of the arterioles is primary and causes the hypertension by mechanically narrowing the peripheral stream bed, thus increasing the peripheral resistance; or the theory of Johnson, advanced in 1868, that substances failing of excretion by diseased kidneys cause a spasm of the peripheral arteries, which leads to the hypertension and the vascular lesions.

Fishberg's anatomic studies, however, indicate that the hypertension cannot well be due to arteriolosclerosis—the increased resistance caused by organic lesions in the small vessels; for in even the most typical cases of essential hypertension the area of vascular involvement is far too small to account for the rise in blood pressure. The condition of the arteries in different parts of the body was investigated in seventy-two cases of essential hypertension, mostly without evidence of impairment of renal function, and it was found that sclerosis of the small arterioles in such cases involves regularly only the kidney, frequently the liver, spleen and pancreas, rarely the brain and heart, and little if at all the great vascular areas of the muscular and cutaneous systems. It is well known from physiologic experiments that any increased peripheral resistance in an organ is immediately compensated for by a vasodilatation elsewhere in the body, so that no increase in the general blood pressure occurs. The arteriolosclerosis would have to involve extensive regions were it to increase mechanically the peripheral resistance by an amount too great to be compensated for elsewhere; i. e., it would have to be a true generalized arteriolosclerosis. But these studies show that it involves only a small fraction of the great arterial periphery, and the vast majority of the arterioles are left with an unnarrowed lumen. In brief, a true generalized arteriolosclerosis does not exist in association with essential hypertension, and, therefore, cannot be the cause of the latter. The exact mechanism by which the increased strain of hypertension causes the arteriolar lesions is evidently complex and as yet totally unexplained; it does not consist solely in the increased blood pressure from within, for in that event the arteriolar lesions would be diffuse and not confined to a few organs, as was found to be the case. Certainly the thickening of the arterioles seen in hypertension cannot be looked on, as it commonly is, as an hypertrophy compensating for a rise in blood pressure, for, on the contrary, the media of the arterioles is usually markedly atrophic in the thickened arterioles.

All the anatomic findings that have been mentioned indicate that the view that hypertension is due to the statically increased resistance offered by organic lesions of the arterioles is untenable, for a true generalized arteriolosclerosis does not exist in association with essential hypertension and, therefore, cannot be the cause of the latter. Since changes in the arterioles of a nature similar to the arteriosclerosis of essential hypertension occur physiologically with advancing years, it may be that arteriolosclerosis is a pathologic exaggeration of these physiologic changes, resulting from the increased wear and tear incidental to the

1. Asher, Leon: Die Entwicklung und Erfolge der experimentellen Medizin in den Vereinigten Staaten, Schweiz. med. Wchnschr. 55:234 (March 12) 1925.

2. Fishberg, A. M.: Anatomic Findings in Essential Hypertension, Arch. Int. Med. 35:650 (May) 1925.

hypertension. Of especial importance is the fact that the anatomic changes in the kidney cannot be reconciled with the theory that essential hypertension is due to a disorder of renal function.

SOME ASPECTS OF BLOOD CHEMISTRY IN PREGNANCY

The acceptance of the view that protein metabolism involves primarily the transformations of amino-acids —the degradation products of the proteins—in the organism has placed diverse aspects of bodily function in a new light. It has become easier also to realize why the proteins that are found in the urine under a variety of pathologic conditions are different from the albuminous compounds that are ingested. Wells [1] has pointed out that numerous attempts have been made by both chemical and immunologic methods to determine whether the proteins in the urine in nephritis come from the food, the blood, or from the renal cells themselves. In alimentary albuminuria, the urinary proteins seem not to be those of the food, but human proteins. In nephritis, differentiation between serum proteins and kidney proteins has not yet been satisfactorily accomplished.

If urinary proteins do not represent the undestroyed residues of food proteins, it becomes a question of dietary import as to whether the protein intake need be so greatly restricted as was long recommended in cases of albuminuria. Recent writers [2] have pointed out, further, that it is common practice in many centers of medicine to place pregnant patients suffering from albuminuria, high blood pressure or edema on diets in which the protein is severely restricted. Such a restriction, it is averred, must many times be unnecessary; indeed, if carried to excess, it may positively be harmful. Protein is requisite for the growth of the fetus. If not obtainable from the diet, it will inevitably be obtained from the maternal tissues.

In the past, justification for the restriction of protein in the diet has been sought in studies of the nonprotein nitrogen content of the blood. It is true that this component of the circulating fluid has been found to be increased when the renal function is impaired; and an abnormally high content of nonprotein nitrogen in the blood is looked on with significant concern, particularly with respect to the efficiency of the kidneys. Myers [3] has remarked that since only moderate impairment of renal function has a definite influence on the level of the blood urea, it constitutes the most valuable measure of renal function at our disposal. As urea is largely of exogenous origin in the blood, the catabolite may be subject to variation as a result of dietary influences also. As various observers have reported relatively high figures for the nonprotein nitrogen content of the blood in the later months of pregnancy and particularly in cases of the "toxemias" of later pregnancy, there has been a tendency to advocate dietary restrictions involving the food protein. It appears from the latest studies that in eclampsia normal and occasionally subnormal figures for urea nitrogen are found, although whole blood nonprotein nitrogen values are generally slightly high, suggesting an increase in the undetermined nitrogen fraction.[4] It has lately been emphasized by Canadian investigators,[2] also, that it appears to be a characteristic of pregnancy to find increases in the nonprotein nitrogen without corresponding increases in urea. In their opinion, undue prognostic stress should not be placed on such data until the nature of the unknown fraction of nitrogen in the blood is revealed. Normally, it constitutes 50 per cent. of the total nonprotein nitrogen, but in pregnancy it may form as much as 80 per cent. With such large variations of an unknown substance or substances possible, interpretation becomes a matter of guesswork. Consequently, too, there seems to be less justification in insisting on undue dietary restrictions through "blind adherence" to assumptions that stress, unduly perhaps, the challenged relation of diet to the severer metabolic disturbances of pregnancy.

THE PATHOLOGIC CONDITIONS INDUCED BY A DEFICIENCY OF VITAMIN A

It has now been firmly established that mixtures of the so-called proximate principles—proteins, fats and carbohydrates—even when supplemented with a diversity of inorganic salts carrying the elements known to play a part in the animal economy, are not of themselves adequate for the nutritive needs of the body. Failure to thrive on such seemingly adequate rations cannot properly be attributed to lack of flavor or monotony of diet, as was once supposed to be the case. It is due to the lack of food essentials of a different category; substances that need to be supplied in very small amounts at most to insure nutritive success instead of physiologic distress and decline. The demonstration that the lack of vitamins in the diet may be attended with nutritive disaster has been one of the outstanding contributions of the physiologic research of the last decade. It has been largely responsible for the establishment of a new category of maladies, the so-called deficiency diseases.

The pathologic manifestations of a lack of vitamin B have long been observed, so that it required little argument to recognize their associations as soon as the crucial animal experiments were undertaken. Thus, beriberi was soon translated into terms of an avitaminosis. This is true also of scurvy, which is

1. Wells, H. G.: Chemical Pathology, Ed. 4, Philadelphia, W. B. Saunders Company, 1920, p. 535.
2. Harding, V. J.; Allin, K. D., and Van Wyck, H. B.: Nonprotein Nitrogen and Uric Acid Values in Blood in Pregnancy, J. Obst. & Gynec. Brit. Emp. 28, No. 4, 1924.
3. Myers, V. C.: Chemical Changes in the Blood and Their Clinical Significance, Physiol. Rev. 4: 274 (April) 1924.
4. Killian, J. A., and Sherwin, C. P.: Am. J. Obst. & Gynec. 2: 6 (July) 1921.

described today as the expression of a lack of the antiscorbutic vitamin C. Early in the study of vitamin A, the first of the so-called fat-soluble accessory food factors to be recognized, the development of ophthalmia became manifest as a symptom of the specific deficiency involved. The genesis of xerophthalmia as a consequence of faulty diet and its cure by dietary treatment with sources of vitamin A have been established for human beings as well as for animals. On the basis of animal experimentation, Osborne and Mendel also presently called attention to the possible relation of phosphatic urinary calculi to the lack of vitamin A in the diet.

Aside from such manifestations and the nutritive collapse that may attend them, there have not been many indications of definite pathologic disturbances referable to the deficiency of vitamin A. A recent study by Wolbach and Howe [1] at the Medical School of Harvard University suggests, however, that the conditions that lead to xerophthalmia, although exhibiting few noteworthy gross pathologic changes, may nevertheless be attended by structural alterations of far reaching consequence. A careful microscopic study of rats killed at different stages in the development of advanced xerophthalmia showed that the morphologic concomitants in the condition are limited almost entirely to epithelial structures. While interesting transitional stages may be observed, the condition of xerophthalmia results in the transformation of various epitheliums into a stratified squamous keratinizing epithelium. This change is practically constant in the upper respiratory tract, including the whole of the nasal passages, larynx, trachea and bronchi. In the digestive tract, the stomach and intestines have so far exhibited no change, but all the salivary glands and the accessory salivary glands are affected, and frequently show cavities resulting from the retention of desquamated keratinized epithelial cells. Similar changes occur late, in the pancreas. In the genito-urinary tract, this transformation into keratinized epithelium is found in the renal pelvis, bladder, seminal vesicles, epididymis and prostate gland. In all the glands noted above there is a considerable degree of atrophy before the change in character of the epithelium takes place. The principal conclusion of the Harvard pathologists is that deprivation of the anti-xerophthalmic vitamin (fat-soluble A) affects specifically epithelial tissues. This effect is manifested in cells having presumably widely different chemical (secretory) functions, and terminates in the complete loss of specific function and the transformation into a common type of chemically inactive (nonsecretory) epithelium.

On the basis of still different observations regarding the effects of dietaries that are deficient in vitamin A, Jackson [2] of the University of Minnesota has ventured to suggest that the resulting nutritive condition may lessen the resistance of the kidney, and permit infections there leading to nephritis, as well as favor infections of the respiratory and alimentary tracts. The almost inevitable probability that the special type of avitaminosis due to lack of vitamin A would be attended with widely disseminated bodily disorder seems about to be realized in the experimental investigations now in progress in various places.

1. Wolbach, S. B., and Howe, P. R.: The Epithelial Tissues in Experimental Xerophthalmia, Proc. Soc. Exper. Biol. & Med. 22:402 (April) 1925.

THE KIDNEY AS A FILTER FOR BACTERIA

The entrance of bacteria into the blood stream brings about a situation in the body that calls forth its means of defense against the undesirable invaders. Microorganisms encounter various sorts of antagonisms or destructive agencies under such circumstances. Thus, resistance to the encroachment and the disease engendered by bacteria may be offered by the activity of phagocytic body cells or by virtue of certain properties of the blood and body fluids. The power of the blood to destroy certain bacteria has been known many years, so that bacteriolysis is a recognized feature of immunology. Phagocytosis is, to quote a student of its manifestations, the first line and most important defensive mechanism against microbial invasions. In the sterilization of the blood through such means there may be phagocytosis not only by blood cells, as was formerly assumed, but also by the endothelial cells, the Kupffer cells in the liver, and similar cells in the lungs, spleen and other organs.

An entirely different mode of ridding the body of circulating bacteria has been alleged to exist in their elimination through the kidney. This represents sterilization of the circulating medium through excretion. The ability of the renal structures to remove formed particles even as small as bacteria has, however, been debated. The problem at issue involves the mode of infection in pyelitis. A recent writer [3] has remarked that if it were true, as has been asserted by several students of the subject, that bacteria gaining entrance to the circulation are excreted into the urine, the avenue of approach for infection would be relatively clear. We should have to assume only that the bacteria are of such virulence that they produce infections on reaching the pelvis of the kidney.

At the Mayo Clinic, Helmholz and Millikin [3] have reinvestigated the relation of bacteria introduced into the circulation of animals, with respect to the possible passage of the micro-organisms through the kidney filter. In no instances were bacteria found in the urine at the end of four hours or earlier. Only in the

2. Jackson, C. M.: Spontaneous Nephritis and Compensatory Renal Hypertrophy in Albino Rats on Diet Deficient in Vitamin A, Proc. Soc. Exper. Biol. & Med. 22:410 (April) 1925.

3. Helmholz, H. F., and Millikin, Frances: The Kidney: A Filter for Bacteria, I, The Presence of Bacteria in the Blood, Kidney and Urine After Varying Intervals Following Intravenous Injection, Am. J. Dis. Child. 29:497 (April) 1925.

experiments with virulent staphylococci did bacteria appear regularly in the urine after seven hours, exceptionally after six hours and rarely after five hours. In many experiments, bacteria were not present in the urine even after twenty-four and forty-eight hours; in those in which they were present, there was no regularity in the finding. When local lesions were produced, as with the virulent staphylococci, bacteria were constantly found after seven hours. This was not true of the virulent colon organisms. Avirulent staphylococci, avirulent colon bacilli and *Streptococcus viridans* did not appear in the urine at any time. *Streptococcus hemolyticus*, both avirulent and virulent, appeared only exceptionally, and never before seven hours after injection. Evidently, methods of disposal of microorganisms from the blood other than secretion must prevail, except in the instances in which there is a real damage to the renal structures. It should be remembered, in this connection, that, in the endothelial cells of its large capillary bed, the kidney possesses a large phagocytic field, which can dispose of large numbers of bacteria. Even vigorous diuresis, if we may accept the investigations of Helmholz and Field,[4] does not break down the kidney filter; at any rate, the change brought about thereby does not readily allow bacteria to pass through into the urine.

Current Comment

MELIOIDOSIS—A DISEASE OF RODENTS COMMUNICABLE TO MAN

Melioidosis, a disease found in Singapore, Rangoon and Kuala Lumpur, has been so called because of its resemblance to glanders. Although primarily a disease of rodents, at least fifty cases have occurred in man, with forty-eight deaths. Melioidosis was first recognized as communicable to man by Whitmore, who saw thirty-eight cases in Rangoon in 1911 and 1912; in 1913, Stanton and Fletcher[5] encountered the disease in the form of a distemper among laboratory animals at Kuala Lumpur. Melioidosis originates apparently among wild rats, from which it can be easily transmitted to laboratory animals by means of infected food or inoculation. The initial symptom in Stanton and Fletcher's cases was a milky discharge from the eyes and nose followed promptly by pneumonia. Every case was fatal. How man contracts melioidosis is not known; in several human cases, severe gastro-intestinal symptoms marked the onset. It seems probable, therefore, that man becomes infected through food which rats have contaminated. Some cases resemble cholera or plague, others malaria or typhoid; if abscesses or pustules appear, the condition resembles glanders; if bone lesions appear, it resembles tertiary syphilis or tuberculosis. A diagnosis can be established only by cultures from the lesions, the blood, the sputum or the urine. The characteristic lesion of melioidosis is a small caseous nodule, which has been found in almost every part of the body except the brain. The nodules form small abscesses in the spleen, and large abscesses in the liver. In the lungs, they seldom break down. The causative germ is *Bacterium whitmori*, an organism about the size and shape of *Bacillus mallei*. It stains readily with ordinary dyes, is bipolar with Leishman's stain, and is neither acid fast nor gram positive. The salient features of this organism are a characteristic corrugated growth on glycerin agar and the active serpentine motility in young cultures, which disappears as the cultures age. Stanton and Fletcher investigated fourteen strains of *Bacterium whitmori* serologically. They found that the group was homogeneous and closely related to *Bacillus mallei*. In man, however, they did not see a single case in which the infection could be traced to a previous case, and the patients were all treated in the general wards of hospitals. Melioidosis has existed in Rangoon for fourteen years. Until recently, several tropical diseases now found in the United States were as far away as melioidosis appears to be. Now that kala-azar has appeared among us, the American physician will need greater knowledge of tropical disorders.

4. Helmholz, H. F., and Field, R. S.: The Kidney: A Filter for Bacteria, II, The Effect of Diuresis on the Excretion of Bacteria by the Kidney, Am. J. Dis. Child. 29:506 (April) 1925.

5. Stanton, A. T., and Fletcher, William: Melioidosis, Disease of Rodents Communicable to Man, Bull. 5, Inst. M. Res., Federated Malay States, 1924.

HEREDITY AND EXPERIMENTAL CANCER

The theory that cancer is inherited as a recessive trait is attacked by certain writers on the ground that experimental cancers can be produced and transplanted in a much larger percentage of cases than the laws of mendelian inheritance predict. The error involved in this reasoning is pointed out by Dr. Maud Slye.[1] The "take" of a transplanted tumor represents a proliferation of cells of the donor animal, not of the recipient. The parasitic cells will survive and multiply if the host offers nutriment; that is, if the host has the normal (always dominant) power of regeneration. The transplanted cancer cells bring their heredity from their original source and do not assume the biologic laws of the host cells. This explains the discrepancies between the findings of those who are studying heritability of spontaneous cancers and of those who are working with transplanted growths. Another attempt to test the hereditary basis of cancer is the production of liver sarcoma in rats by feeding the larval stage of the tapeworm of the cat. The percentage of positive results depends somewhat on the strain of rats used, and interbreeding of rats that develop liver sarcoma results in the production of offspring showing higher rates for the occurrence of liver sarcoma than the parents had shown. A study of laboratory rats infested with naturally ingested tapeworms, compared with those free from tapeworms, discloses that the former have a higher incidence of liver neoplasms than do the latter. Miss Slye concludes that the number of parasites fed to a rat to induce neoplasms was much larger than the number ingested under normal condi-

1. Slye, Maud: Fundamental Harmony Shown in All Essentials in Spontaneous Neoplasms and in True Experimental Tumors, Radiology 4:17 (Jan.) 1925.

tions, and constitutes a sufficient assault to overwhelm the normal resistance of the animal to the production of a neoplasm. The lesser number of parasites accidentally ingested by laboratory rats permits the normal regenerative process to go on, without knocking out the normal and inherited resistance to the proliferation of undifferentiated cells in the process of repair of inflicted damage. Either the overwhelming assault has destroyed the inherited factor, or the strains of experimental rats were sarcoma strains. Dr. Slye explains the results of tar cancer in a similar manner, and concludes that we must attempt to strengthen normal regenerative power (hereditary cancer resistance) or to evolve a strain whose normal regenerative and resistant powers cannot be overthrown by repeated irritation. The logic of these contentions, based on carefully controlled scientific experiments, does much to establish a correct point of view as to the place occupied by hereditary factors in the occurrence of cancer.

THE WISDOM OF THE PRESS

During the Atlantic City Session of the American Medical Association there arrived on the scene one Leonard L. Landis of New York, who, it was reported, is "Chairman" of the "American Association of Independent Physicians." Landis is the individual who is at present conducting a medical institute in New York City under the euphemistic title, "House of Health." The New York papers at different times have recorded Landis' arrest both by federal and by local authorities in connection with unsavory medical activities. Apparently, after looking about hither and thither, Landis issued a statement to the press informing the public that he was departing from Atlantic City with some of his colleagues thoroughly disgusted with the indifference of the American Medical Association toward questions of vital importance. He announced his extreme displeasure with medical ethics and condemned all serums and vaccines, including smallpox vaccination. Unfortunately for Landis, his press communications came into the hands of intelligent representatives of the press, including men sent to Atlantic City by the New York *Times*, the New York *World*, the New York *Herald-Tribune*, the Philadelphia *Inquirer*, the Associated Press, the Standard News Service, Science Service and local newspapers. Not one of these men sent the statement to his newspaper; instead, every one of them communicated with an official of the American Medical Association, inquiring as to the authenticity of the statement and as to the reliability of Dr. Landis. The result was that the official statement of this renegade physician appeared only in a periodical published in New York City, owned and edited by Mr. Bernarr Macfadden, some time called the "bare torso king." The incident is cited merely as another evidence of the high repute in which scientific medicine is held by the American press at this time. It is a position won by a wide-open policy of education of the public. For many years it has been the principle of the American Medical Association that what benefits the public benefits the physician and that the interest of the public is invariably first.

TESTIMONIALS

We "see by the papers," as Mr. Dooley would say, that Mrs. Alice Roosevelt Longworth has consented to the use of her photograph as an advertisement "for a certain well known beauty cream." We learn further that Mrs. Longworth thus joins a notable gallery made up of "such well known beauties and social leaders as Queen Marie of Roumania, Lady Diana Manners, and Mrs. Reggie Vanderbilt." Possibly we are in for a renaissance of the testimonial epoch; perhaps the giving of testimonials for nostrums is again to become respectable. During the last few years such endorsements as have appeared have been credited, in the main, to bucolic individuals from remote hamlets that could be located by the average person only in a post-office guide. True, within recent times there have been a few instances of "patent medicine" testimonials of "class." There was, for example, the inspiring testimony of the late William E. Mason, formerly United States Senator, who vouched for the virtues of Nuxated Iron. Then, when Sanatogen's star was in the ascension, the public press carried testimonials for this esoteric form of cottage cheese from such well known persons as "Marse" Henry Watterson, John Burroughs, Father Bernard Vaughan, and the Hon. William E. Chandler. These, however, were mild compared with the testimonials of twenty years ago. At the time that Peruna was at its palmiest, with a maximum amount of alcohol and a minimum amount of any other drug of importance, the public press was filled with testimonials from noted men and women, commending the medicinal virtues of this thinly disguised cocktail. A few among the notable galleries of celebrities that Peruna ran were Julia Marlowe, Admiral Schley and Rear Admiral Hichborn. Paine's Celery Compound, an alcoholic nostrum that died with prohibition, had almost as distinguished a group of endorsers as did Peruna, one of the best being that given by Sarah Bernhardt. The Divine Sarah was somewhat addicted to the testimonial habit, having appeared in that capacity not only for the Paine product but also for Duffy's Malt Whiskey, Pinelyptus Pastilles and other preparations of equal therapeutic unimportance. One also calls to mind the testimonial of the Hon. Champ. Clark, who was impressed with the value of Electric Bitters, and also Madame Schumann-Heink's assurance that Fahrney's Blood Vitalizer was a "great help" and a "good medicine." Possibly the testimonial is coming back. "Things are in the saddle." With royalty and the aristocracy of Europe vying with democracy's famous, who knows but the time may come when we shall read a flowery panegyric on some contemporary pick-me-up in which Herr Wilhelm Hohenzollern will recommend the product as an invaluable remedy for that "all gone" feeling!

Leprosy in Africa.—I estimate that there are at least 500,000 lepers in the whole of tropical Africa, and there is some evidence that the disease is spreading down from Upper Niger regions toward the coast. The seriousness of the African leper problem can, therefore, scarcely be exaggerated. —Rogers, Leonard: The Prophylaxis and Treatment of Leprosy, with Special Reference to Tropical Africa, *Kenya M. J.* 1:322 (Feb.) 1925.

PROCEEDINGS OF THE ATLANTIC CITY SESSION

MINUTES OF THE SEVENTY-SIXTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT ATLANTIC CITY, MAY 25-29, 1925

(Continued from page 1747)

MINUTES OF THE SECTIONS

SECTION ON PRACTICE OF MEDICINE

WEDNESDAY, MAY 27—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Elliott P. Joslin, Boston.

Dr. R. Manning Clarke, Los Angeles, read a paper on "The Causes of Peptic Ulcer." Discussed by Drs. Julius Friedenwald, Baltimore; Martin E. Rehfuss, Philadelphia; Fenton B. Turck, New York; Robert T. Morris, New York; John L. Kantor, New York; I. O. Palefski, New York, and R. M. Clarke, Los Angeles.

Drs. W. J. Kerr and G. D. Delprat, San Francisco, presented a paper on "A New Liver Function Test, Using Rose Bengal." Discussed by Drs. P. D. Lamson, Baltimore; Carl H. Greene, Rochester, Minn.; A. L. Benedict, Buffalo, and W. J. Kerr, San Francisco.

Dr. Nathan Rosenthal, New York, read a paper on "Splenectomy in Cases of Banti's Disease." Discussed by Drs. Solomon Solis Cohen, Philadelphia, and Nathan Rosenthal, New York.

The following papers were read as a symposium on "Hyperthyroidism":

Dr. William H. Higgins, Richmond, Va.: "Incipient Hypothyroidism, a Clinical Study."

Drs. H. T. Hyman and Leo Kessel, New York: "The Pathogenesis of Exophthalmic Goiter."

Dr. Henry S. Plummer, Rochester, Minn.: "Basal Metabolism in Clinical Medicine."

These three papers were discussed by Drs. Lewellys F. Barker, Baltimore; J. H. Means, Boston; Solomon Solis Cohen, Philadelphia; W. H. Higgins, Richmond, Va.; H. T. Hyman, New York, and H. H. Plummer, Rochester, Minn.

THURSDAY, MAY 28—MORNING

Drs. N. B. Foster, New York, and Joseph A. Capps, Chicago, being absent, the chairman appointed Drs. M. L. Graves, Galveston, Texas, and L. G. Rowntree, Rochester, Minn., to act in their places on the Executive Committee, to bring in nominations for officers for the ensuing year.

Dr. Elliott P. Joslin, Boston, read the chairman's address, entitled "The Growth, Development and Prognosis of Diabetic Children."

Dr. Albert A. Epstein, New York, read a paper on "The Causal Mechanism of Diabetes Mellitus." Discussed by Drs. W. S. Collens, New York; Elliott P. Joslin, Boston; A. J. Carlson, Chicago; Herman Schwartz, New York, and Albert A. Epstein, New York.

Dr. Rex L. Diveley, Kansas City, Mo., read a paper on "The 1923 Epidemic of Anterior Poliomyelitis in Kansas." Discussed by Drs. Frank Neff, Kansas City, Mo.; F. R. Ober, Boston; Martin Heydemann, Cleveland; John I. Becker, Poughkeepsie, and Rex L. Diveley, Kansas City, Mo.

Dr. Albert H. Rowe, Oakland, Calif., read a paper on "Treatment of Bronchial Asthma." Discussed by Drs. I. S. Kahn, San Antonio, Texas; Ray W. Balyeat, Oklahoma City; George Piress, Los Angeles; W. W. Duke, Kansas City, Mo.; Ralph H. Spangler, Philadelphia; A. I. Rubenstone, Philadelphia; Solomon Solis Cohen, Philadelphia; George N. Jack, Buffalo; Gerald B. Webb, Colorado Springs, Colo., and Albert H. Rowe, Oakland, Calif.

Drs. B. S. Kline and S. S. Berger, Cleveland, presented a paper on "Spirochetal Pulmonary Gangrene with Specific Treatment." Discussed by Drs. Joseph Sailer, Philadelphia; Albert E. Roussel, Philadelphia, and B. S. Kline, Cleveland.

Dr. Gerald B. Webb, Colorado Springs, Colo., read a paper on "Pulmonary Tuberculosis, Prolonged Rest and the Absorption of Deposits." Discussed by Drs. F. M. Pottenger, Monrovia, Calif.; S. Adolphus Knopf, New York; Henry Sewall, Denver, and Gerald B. Webb, Colorado Springs, Colo.

FRIDAY, MAY 29—MORNING

The following officers were elected: chairman, Dr. Eugene S. Kilgore, San Francisco; vice chairman, Dr. David P. Barr, St. Louis; secretary, Dr. Bryce W. Fontaine, Memphis, Tenn.; delegate, Henry A. Christian, Boston; alternate, Roger I. Lee, Boston.

Dr. Lester Neuman, Washington, D. C., read a paper on "Nonsyphilitic Aortitis."

Dr. Harold E. B. Pardee, New York, read a paper on "Hypodermic Digitalis Preparations."

These two papers were discussed by Drs. W. D. Reid, Newton, Mass.; Eugene S. Kilgore, San Francisco; Louis F. Bishop, New York; Lester Neuman, Washington, D. C., and Harold E. B. Pardee, New York.

Dr. M. A. Mortensen, Battle Creek, Mich., read a paper on "Is Arteriosclerosis a Hereditary Constitutional Disease?"

Drs. L. H. Newburgh and P. L. Marsh, Ann Arbor, Mich., presented a paper on "The Dietetic Factor in the Etiology of Renal Disease."

Dr. F. M. Allen, Morristown, N. J., read a paper on "Clinical and Experimental Renal Deficiency."

Dr. Henry A. Christian, Boston, read a paper on "Chronic Nephritis."

These four papers were discussed by Drs. L. F. Bishop, New York; W. D. Reid, Newton, Mass.; Benjamin Jablons, New York; E. S. Kilgore, San Francisco; E. P. Joslin, Boston; Herman Schwartz, New York; A. E. Roussel, Philadelphia; P. L. Marsh, Ann Arbor, Mich.; F. M. Allen, Morristown, N. J.; M. A. Mortensen, Battle Creek, Mich., and Henry A. Christian, Boston.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

WEDNESDAY, MAY 27—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Evarts A. Graham, St. Louis.

Dr. Bertram M. Bernheim, Baltimore, read a paper on "The Unknown Operative Mortality." Discussed by Dr. Jabez N. Jackson, Kansas City, Mo.

Dr. J. Shelton Horsley, Richmond, Va., read a paper on "Unperforated Ulcers of the Terminal Ileum, Symptomatically Simulating Appendicitis." Discussed by Dr. Albert J. Ochsner, Chicago.

Dr. Richard W. Bolling, New York, read a paper on "Congenital Hypertrophic Stenosis of the Pylorus: A Review of Four Hundred and Fifty Cases in Which the Fredet-Rammstedt Operation was Performed." Discussed by Drs. Charles G. Mixter, Boston; Alfred A. Strauss, Chicago; S. V. Haas, New York, and Richard W. Bolling, New York.

Dr. Alexius McGlannan, Baltimore, read a paper on "Amebic Abscess of the Liver: Report of Case Complicated by Subphrenic Abscess." Discussed by Dr. Drury Hinton, Philadelphia.

Dr. John W. Barksdale, Jackson, Miss., read a paper on "Acute Conditions Within the Abdomen." Discussed by Drs. Hubert A. Royster, Raleigh, N. C.; Robert T. Morris, New York; R. M. Toll, Scranton, Pa.; F. G. DuBose, Selma, Ala., and John W. Barksdale, Jackson, Miss.

Dr. J. Earl Else, Portland, Ore., read a paper on "Adenomatosis or the Diffuse Adenomatous Goiter."

Dr. John deJarnette Pemberton, Rochester, Minn., read a paper on "Present-Day Surgery of the Thyroid."

These two papers were discussed by Drs. Frank H. Lahey, Boston; B. T. King, Seattle; E. P. Richardson, Boston; Allen Graham, Cleveland; George W. Crile, Cleveland; H. S. Plummer, Rochester, Minn.; Emil Goetsch, Brooklyn; J. Earl Else, Portland, Ore., and John deJarnette Pemberton, Rochester, Minn.

Thursday, May 28—Afternoon

The meeting was called to order at 2 o'clock by Dr. Dean Lewis, Chicago.

Dr. Evarts A. Graham, St. Louis, read the chairman's address.

Dr. Edward W. Archibald, Montreal, Canada, read a paper on "Pulmonary Tuberculosis: Its Surgical Treatment." Discussed by Drs. Charles D. Parfitt, Gravenhurst, Ont.; A. J. Ochsner, Chicago; S. Adolphus Knopf, New York, and Dr. Edward W. Archibald, Montreal, Canada.

Dr. Carl A. Hedblom, Madison, Wis., read a paper on "Diaphragmatic Hernia." Discussed by Drs. Leon T. LeWald, New York; Francis S. Mathews, New York, and Carl A. Hedblom, Madison, Wis.

Dr. Andrew Stewart Lobingier, Los Angeles, read a paper on "Surgical Drainage in Infection of the Liver, Bile Ducts and Gallbladder."

Drs. George P. Muller, I. S. Ravdin and Elizabeth Ravdin, Philadelphia, read a paper on "The Alteration of Bile Pigment Metabolism in Biliary Tract Infections."

Dr. E. Starr Judd, Rochester, Minn., read a paper on "Surgical Procedures in Jaundiced Patients."

These three papers were discussed by Drs. Joshua E. Sweet, Philadelphia; F. T. Van Beuren, New York; B. B. Davis, Omaha; John B. Deaver, Philadelphia; David C. Straus, Chicago; Andrew S. Lobingier, Los Angeles, and Elizabeth Ravdin, Philadelphia.

Dr. Vilray P. Blair, St. Louis, read a paper on "Total and Subtotal Restoration of the Nose." Discussed by Drs. George M. Dorrance, Philadelphia; George C. Schaeffer, Columbus, Ohio; Robert H. Ivy, Philadelphia; W. W. Carter, New York, and Vilray P. Blair, St. Louis.

Drs. Dean Lewis and Edwin M. Miller, Chicago, presented a paper on "End-Results in Peripheral Nerve Surgery." Discussed by Dr. Harry Kerr, Washington, D. C.

Friday, May 29—Afternoon

The meeting was called to order at 2 o'clock by the chairman.

The following officers were elected: chairman, Dr. D. B. Phemister, Chicago; vice chairman, Dr. Joshua E. Sweet, Philadelphia; secretary, Dr. J. Tate Mason, Seattle; delegate, Dr. Dean Lewis, Baltimore; alternate, Dr. Malvern Clopton, St. Louis.

Dr. T. Turner Thomas, Philadelphia, read a paper on "Recurrent Dislocations of the Shoulder." Discussed by Dr. Damon B. Pfeiffer, Philadelphia.

Dr. Claude C. Coleman, Richmond, Va., read a paper on "Determination of Local Compression as an Indication for Laminectomy in Acute Injury of the Spinal Cord." Discussed by Drs. Alfred W. Adson, Rochester, Minn.; Charles Bagley, Jr., Baltimore, and Claude C. Coleman, Richmond, Va.

Dr. Arthur C. Scott, Temple, Texas, read a paper on "Glandular Block Dissections of Metastatic Cancer Done Exclusively with the Cautery: Report of One Hundred and Sixty Cases." Discussed by Drs. Frank E. Adair, New York; J. F. Percey, Los Angeles, and Arthur C. Scott, Temple, Texas.

Dr. John B. Deaver, Philadelphia, read a paper on "Subtotal Gastrectomy."

Dr. John M. T. Finney, Baltimore, read a paper on "Complete Gastrectomy."

Dr. George W. Crile, Cleveland, read a paper on "Surgery of the Stomach and Duodenum: Special Points."

These three papers were discussed by Drs. William J. Mayo, Rochester, Minn.; Alfred A. Strauss, Chicago; Moses Behrend, Philadelphia; J. Shelton Horsley, Richmond, Va.; John B. Deaver, Philadelphia; John M. T. Finney, Baltimore, and George W. Crile, Cleveland.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

Wednesday, May 27—Morning

The meeting was called to order at 9:15 by the vice chairman, Dr. H. C. Bailey, New York.

The chairman appointed Drs. N. S. Heaney, Chicago, and J. C. Litzenberg, Minneapolis, to serve on the Executive Committee.

Dr. Lawrence R. Wharton, Baltimore, read a paper on "Tuberculosis of the Vagina." Discussed by Drs. Henry Schmitz, Chicago; J. P. Greenhill, Chicago; Emil Novak, Baltimore, and Lawrence R. Wharton, Baltimore.

Dr. William T. Kennedy, New York, read a paper on "Isthmospasm of the Fallopian Tube." Discussed by Drs. John O. Polak, Brooklyn; Ludwig A. Emge, San Francisco; Donald Macomber, Boston, and William T. Kennedy, New York.

Drs. Edgar Allen, Columbia, Mo., and J. P. Pratt, Detroit, presented a paper on "Distribution of the Ovarian Follicular Hormone in Human Genital Tissues." Discussed by Drs. Emil Novak, Baltimore; A. J. Carlson, Chicago; Robert L. Dickinson, New York; George Gray Ward, New York, and Edgar Allen, Columbia, Mo.

Dr. Robert L. Dickinson, New York, read a paper on "The Average Sex Life of American Women and the Relation Between Experiences and Genital Findings." Discussed by Drs. J. F. Cooper, Boston, and Robert L. Dickinson, New York.

Drs. Herman L. Kretschmer and N. Sproat Heaney, Chicago, presented a paper on "Dilatation of the Ureter and Kidney Pelvis During Pregnancy." Discussed by Drs. L. R. Wharton, Baltimore, and N. Sproat Heaney, Chicago.

Drs. George Gray Ward and Lillian K. P. Farrar, New York, presented a paper on "Radium Treatment of Carcinoma of the Cervix Uteri: Results at the Woman's Hospital, New York, After Five Years." Discussed by Drs. George Gray Ward, New York; Henry Schmitz, Chicago; H. C. Bailey, New York, and Lillian K. P. Farrar, New York.

Thursday, May 28—Morning

The meeting was called to order at 9:20 by the vice chairman.

Dr. Ludwig A. Emge, San Francisco, read a paper on "The Surgical Treatment of Varicose Veins of the Female Pelvis." No discussion.

Drs. James E. Talley and Dorothy L. Ashton, Philadelphia, presented a paper on "Central Puerperal Palsies." No discussion.

Drs. William Sharpe and A. S. Maclaire, New York, presented a paper on "Intracranial Hemorrhages in the New-Born." Discussed by Drs. J. B. Sidbury, Wilmington, N. C.; J. B. De Lee, Chicago, and William Sharpe, New York.

Dr. Herbert Thoms, New Haven, Conn., read a paper on "Pelvimetry of the Superior Strait by Means of the Roentgen Ray." Discussed by Drs. Ludwig A. Emge, San Francisco, and Herbert Thoms, New Haven, Conn.

Dr. John P. Gardiner, Toledo, Ohio, read a paper on "The Ischial-Ramic Diameter: The Origin of the Common Left Cervical Tear and Its Prevention." Discussed by Drs. J. B. De Lee, Chicago, and J. P. Gardiner, Toledo, Ohio.

Dr. Paul Titus, Pittsburgh, read a paper on "The Treatment of Hyperemesis Gravidarum by Intravenous Injections of Glucose and Carbohydrate Feedings." Discussed by Drs. J. P. Greenhill, Chicago; William Thalhimer, Milwaukee; Carl H. Davis, Milwaukee; J. P. Gardiner, Toledo, Ohio; J. B. De Lee, Chicago; Charles H. Harris, Fort Worth, Texas, and Paul Titus, Pittsburgh.

Friday, May 29—Morning

The meeting was called to order at 9:15 by the chairman.

The following officers were elected: chairman, Dr. George Gray Ward, New York; vice chairman, Dr. Emil Novak,

Baltimore; secretary, Dr. Carl Henry Davis, Milwaukee; delegate, Dr. John O. Polak, Brooklyn; alternate, Dr. Arthur H. Curtis, Chicago.

Dr. Robert L. Dickinson, New York, offered a resolution in the form of a motion, that the chairman of this section appoint a committee to consider the matter of cooperation with other responsible organizations on the study of sex problems. Motion seconded by Dr. J. C. Litzenberg, Minneapolis, and carried.

Dr. Robert L. Dickinson, New York, offered the following resolution:

Resolved, That this section hereby recommend the alteration of existing laws wherever necessary so that physicians may legally give contraceptive information to their patients in the regular course of their practice.

Motion seconded by Dr. J. C. Litzenberg, Minneapolis, and carried.

Dr. William Thalhimer, Milwaukee, read a paper on "Poor Surgical Risks: Laboratory Assistance in Preparation for Operation and in Postoperative Care."

Dr. Daniel F. Jones, Boston, read a paper on "Abdominal Surgery in Patients with Diabetes."

Drs. Thomas G. Orr and Russell L. Haden, Kansas City, Mo., presented a paper on "Reducing the Surgical Risk in Some Gastro-Intestinal Conditions."

Drs. William J. Mayo and Waltman Walters, Rochester, Minn., presented a paper on "Abnormal Functioning of the Liver."

Dr. John G. Clark, Philadelphia, read a paper on "The Poor Risk for Surgery of the Pelvis."

Dr. Frank H. Lahey, Boston, read a paper on "The Value of Organized Surgery to the Poor Surgical Risk."

These six papers were discussed by Drs. Leon T. LeWald, New York; Robert L. Dickinson, New York; J. B. De Lee, Chicago; W. D. Johnson, Batavia, N. Y.; J. A. Ruben, Pittsburgh, and J. F. Grattan, New York.

SECTION ON OPHTHALMOLOGY

WEDNESDAY, MAY 27—AFTERNOON

The meeting was called to order at 2:15 by the chairman, Dr. Marcus Feingold, New Orleans.

Dr. Marcus Feingold, New Orleans, read the Chairman's address, entitled "The Habit of Attending Medical Meetings."

Dr. George E. de Schweinitz, Philadelphia, extended to the members of the section an invitation from the British Medical Society to attend its meeting in Bath, England, July 18, in connection with their trip to the International Congress of English Speaking Ophthalmologists in London.

Dr. William C. Posey, Philadelphia, read the report of the Committee on Visual Standards for Drivers of Motor Vehicles.

It was moved by Dr. C. D. Wescott, Chicago, that the report be approved.

Motion seconded.

Dr. A. J. Bedell, Albany, N. Y., moved that the report be referred to the House of Delegates assembled on Thursday, with the approval of the section.

Motion seconded and carried.

Dr. Ralph A. Fenton, Portland, Ore., read a paper on "Epithelioma of the Lacrimal Sac." Discussed by Drs. Allen Greenwood, Boston; L. Webster Fox, Philadelphia; William C. Posey, Philadelphia, and Ralph A. Fenton, Portland, Ore.

Dr. Harry S. Gradle, Chicago, read the report of the Committee on Compensation for Eye Injuries, as follows:

Owing to the unavoidable absence of the chairman, I have been asked to present this report of the Committee for your consideration and adoption. Your committee has labored faithfully and strenuously for five years and is now presenting a unanimous report that represents its last word in this matter. If the section adopts this report, your committee will be more than pleased to continue its work along lines to be specified later; but if it pleases you to reject this report, then the committee requests that it be discharged from a further consideration of this problem. This report is based on:

(*a*) The practical consideration of the question of compensation based on the visual efficiency of the individual and taking into account that which has been written in the past and has been regarded as authentic.

(*b*) A mathematical consideration of the evaluation of the various factors of the visual act, part of which has been presented by Messrs. Snell and Sterling elsewhere.

(*c*) An experimental consideration of the value of central visual acuity so far as it affects the efficiency of the individual.

(*d*) A practical consideration and a clinical study of the required visual efficiency of an individual.

The entire country is waiting for the action of the section in the matter of this report, and therefore the committee urges that action be taken at this meeting. Sufficient time has elapsed since the appearance of the presession volume of this section to allow of a careful study. If it pleases the section to adopt this report, the committee suggests that the committee be continued for further action as follows:

(*a*) The report to be submitted to all local and national ophthalmologic societies for universal adoption in order that the ophthalmologists of the country may present a solid front in this matter.

(*b*) After such adoption, the report should be submitted to the various insurance companies, industrial associations, labor organizations, and finally compensation boards of the various states.

(*c*) When all parties mentioned have agreed to accept the report, then a uniform statute embodying the report should be presented simultaneously to the legislatures of the various states.

Only in this way can there come a nation-wide uniformity in compensation laws.

The committee wishes to embrace this opportunity to extend its thanks to two gentlemen whose assistance has proved invaluable: Mr. Arthur J. Sweet, consulting engineer of Milwaukee, and Mr. Scott Sterling of the Bausch and Lomb Optical Company, Rochester, N. Y.

After discussion by Dr. E. E. Holt, Portland, Maine, it was moved by Dr. A. J. Bedell that the section adopt this report and that it be carried to the House of Delegates with the endorsement of the section.

Motion seconded and carried.

Drs. George S. Derby and Maud Carvill, Boston, presented a paper on "Interstitial Keratitis." Discussed by Drs. Harry S. Gradle, Chicago; Andrew A. Eggston, New York; F. H. Verhoeff, Boston; W. L. Thompson, Bayard, Iowa; W. H. Wilder, Chicago; George E. de Schweinitz, Philadelphia; Cassius D. Wescott, Chicago; Hiram Woods, Baltimore; H. Maxwell Langdon, Philadelphia; Clyde E. McDannald, New York, and George S. Derby, Boston.

Dr. Edward Stieren, Pittsburgh, read a paper on "Melanosarcoma of the Choroid with Extension to the Orbit: Report of Case." Discussed by Drs. Arthur J. Bedell, Albany, N. Y.; E. C. Ellett, Memphis, Tenn.; E. E. Blaauw, Buffalo; W. H. Wilder, Chicago, and Edward Stieren, Pittsburgh.

Dr. James M. Patton, Omaha, read a paper entitled "Oculist or Optometrist—Which?" Discussed by Drs. C. D. Wescott, Chicago; H. B. Woodward, Chicago; Alexander Duane, New York; Charles A. Bahn, New Orleans; George S. Derby, Boston; E. E. Holt, Portland, Maine; Hiram Woods, Baltimore; John O. McReynolds, Dallas, Texas; J. W. Kimberlin, Kansas City, Mo.; Charles P. Small, Chicago; John J. O'Brien, Schenectady, N. Y.; John A. Donovan, Butte, Mont., and J. M. Patton, Omaha.

Dr. Luther C. Peter, Philadelphia, read a paper on "Anatomic Method of Studying and Recording the Motility of the Eyes." Discussed by Drs. Alexander Duane, New York; Manuel Uribe Troncoso, New York, and E. E. Holt, Portland, Maine.

THURSDAY, MAY 28—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman.

Dr. Manuel Uribe Troncoso, New York, presented a gonioscope, with pictures and illustrations of what can be seen with it in the angle of the anterior chamber.

Dr. Charles A. Bahn, New Orleans, presented a combined ophthalmoscope, skiascope and slit lamp to be used as an accessory to the corneal microscope. The instrument consists of an illuminating apparatus attached to a telescope that can be adjusted. For slit lamp work the ophthalmoscope is detached.

Dr. Myron Metzenbaum, Cleveland, presented specially devised full vision spectacles, which can be adjusted to solve the problem of binocular lenses in operating work.

Dr. Sidney Israel, Houston, Texas, exhibited a suction tube to be attached to either electrical or water apparatus, to be used in removing foreign bodies.

Dr. George Huston Bell, New York, presented a cataract eye speculum designed to lie over the nose with the hinge over the

nonoperated eye, leaving the temporal region, on the side of the operation, entirely free of parts that might in any way limit the operator's freedom or come into accidental contact with the cataract knife or other sharp instruments.

Drs. William E. Gamble and Richard C. Gamble, Chicago, read a paper on "Tuberculosis Affecting the Optic Chiasm with Secondary Optic Nerve Atrophy and Retinitis: Diagnosis and Treatment with Tuberculin." Discussed by Drs. Malcolm C. Rose, New York; Harry A. Smith, Delta, Colo.; T. B. Holloway, Philadelphia; Edward Jackson, Denver, and W. E. Gamble, Chicago.

Dr. Edward Jackson, Denver, read a paper on "The Diagnosis of Blindness." Discussed by Drs. T. B. Schneideman, Philadelphia; Lucien Howe, Buffalo; F. H. Verhoeff, Boston, and Edward Jackson, Denver.

Dr. Albert C. Snell, Rochester, N. Y., read a paper on "Visual Efficiency of Various Degrees of Subnormal Visual Acuity: Its Effects on Earning Ability." Discussed by Drs. John A. Donovan, Butte, Mont.; E. E. Holt, Portland, Maine; Edward Jackson, Denver, and Albert C. Snell, Rochester, N. Y.

Dr. Everett L. Goar, Houston, Texas, read a paper on "Alternating Convergent Squint." Discussed by Drs. Walter B. Lancaster, Boston; Luther C. Peter, Philadelphia; Oscar Wilkinson, Washington, D. C.; F. H. Verhoeff, Boston, and Everett L. Goar, Houston, Texas.

Dr. C. S. O'Brien, Indianapolis, read a paper on "Ocular Muscle Balance Following Prolonged Monocular Occlusion." Discussed by Drs. F. W. Marlow, Syracuse, N. Y.; S. J. Beach, Portland, Maine; Walter B. Lancaster, Boston; William Zentmayer, Philadelphia, and C. S. O'Brien, Indianapolis.

Dr. Cassius D. Wescott, delegate to the House of Delegates, reported that the House of Delegates had acted favorably on the report of the Committee on Compensation, and also the report of the Committee on Physical Standards for Drivers of Motor Vehicles.

Dr. Harry Friedenwald, Baltimore, read a paper on "Diabetic Retinitis." Discussed by Drs. T. B. Holloway, Philadelphia; George E. de Schweinitz, Philadelphia; Harry S. Gradle, Chicago; W. H. Wilder, Chicago; E. E. Holt, Portland, Maine, and Harry Friedenwald, Baltimore.

Dr. W. I. Lillie, Rochester, Minn., read a paper on "Ocular Phenomena Produced by Temporal Lobe Tumors." Discussed by Drs. Emory Hill, Richmond, Va.; George E. de Schweinitz, Philadelphia; A. W. Adson, Rochester, Minn., and H. I. Lillie, Rochester, Minn.

Friday, May 29—Afternoon

The meeting was called to order at 2 o'clock by the chairman.

The secretary read a letter from the Department of Commerce, Bureau of Standards, asking that a committee be appointed from this section to work with like committees from other organizations on "Authorized Methods of Determining the Power of Spectacle Lenses." It was moved by Dr. J. M. Patton, Omaha, that a committee of three be appointed by the chairman to investigate the subject and make such reports as it deemed advisable to the Bureau of Standards. Motion seconded. An amendment offered by Dr. Harry S. Gradle, that the committee from this section get in touch with the committee from the Optical Society of America, was accepted, and the amended motion was carried.

The secretary read a letter from the Colorado Ophthalmological Society regarding the danger to children's eyes from the unrestricted sale of air-guns, and asking that this section take such action as deemed advisable. Moved by Dr. Arthur J. Bedell that the section instruct the secretary to endorse the letter and refer it to the Committee on Health and Public Instruction of the American Medical Association.

Motion seconded and carried.

Moved by Dr. F. Park Lewis that the proper authorities of the American Medical Association be asked again to resume the popular campaign against the indiscriminate use of firearms and fireworks, which results so disastrously.

Motion seconded and carried.

Dr. L. Webster Fox offered the following resolution:

Whereas, A serious condition exists in regard to the prevalence among the American Indian tribes of trachoma, the Section on Ophthalmology of the American Medical Association wishes to urge the Federal Government to increase its annual appropriation to the Commission on Indian Affairs so that it may have sufficient funds successfully to carry on its work against the spread of trachoma.

Moved by Dr. C. D. Wescott that the chairman appoint a committee to act in cooperation with the Bureau of Legal Medicine and Legislation of the American Medical Association; also the Council on Medical Education and Hospitals, and the Bureau of Health and Public Instruction.

Motion seconded and carried.

Moved by Dr. Lucien Howe that the report of the Committee on Hereditary Blindness as printed be adopted and the committee continued.

Motion seconded and carried.

The Committee on the Investigation of Ocular Muscles reported progress. Moved by Dr. Lucien Howe that the committee be continued.

Motion seconded and carried.

The Committee on Local Anesthesia offered no report. Moved by Dr. L. Webster Fox that the committee be continued.

Motion seconded and carried.

Moved by Dr. C. D. Wescott that the report of the Committee on Knapp Testimonial Fund as printed be approved.

Motion seconded and carried.

The Committee on the Awarding of the Knapp Medal had no report to offer.

Dr. Walter B. Lancaster offered the report for the American Board for Ophthalmic Examinations.

Moved by Dr. L. Webster Fox that the report be received and filed.

Motion seconded and carried.

The report of the Committee on Proposed International Congress for Conservation of Vision, as printed, was offered by Dr. W. C. Posey. Moved by Dr. C. D. Wescott that the report be adopted.

Motion seconded.

Vote on Dr. Wescott's motion carried.

The following officers were elected: chairman, Dr. Arnold Knapp, New York; vice chairman, Dr. Harry Friedenwald, Baltimore; secretary, Dr. William C. Finnoff, Denver; delegate, Dr. W. H. Wilder, Chicago; alternate, Dr. Harry S. Gradle, Chicago; member of American Board for Ophthalmic Examinations, Dr. E. C. Ellett, Memphis, Tenn.

Drs. Walter R. Parker, Detroit, William Zentmayer, Philadelphia, and E. C. Ellett, Memphis, were elected members of the Committee on the Knapp Medal.

Dr. L. Webster Fox, Philadelphia, read a paper on "The Trachoma Problem Among the North American Indians."

Dr. S. Lewis Ziegler, Philadelphia, read a paper on "The Surgery of Trachoma: Practical Problems."

These two papers were discussed by Drs. J. A. Stucky, Lexington, Ky.; I. Z. Stalberg, Atlantic City, N. J.; W. H. Wilder, Chicago; L. Webster Fox, Philadelphia; J. M. Patton, Omaha; D. D. McHenry, Oklahoma City; Stewart B. Muncaster, Washington, D. C.; G. W. Walker, Fresno, Calif.; E. E. Holt, Portland, Maine; L. C. Ingram, Orlando, Fla.; L. Webster Fox, Philadelphia, and S. Lewis Ziegler, Philadelphia.

Drs. Walter Scott Franklin and Frederick C. Cordes, San Francisco, presented a paper on "Electric Cataract." Discussed by Drs. William E. Bruner, Cleveland, and John O. McReynolds, Dallas, Texas.

Dr. Conrad Berens, New York, read a paper on "The Untied Suture in Cataract Extraction: Conclusions." Discussed by Drs. George H. Bell, New York; S. Lewis Ziegler, Philadelphia; John O. McReynolds, Dallas, Texas; F. H. Verhoeff, Boston; Frederick Frisch, Atlantic City, N. J., and Conrad Berens, New York.

Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., read a paper on "Proapse of the Iris After Cataract Extraction." Discussed by Drs. W. H. Wilder, Chicago; S. Lewis Ziegler, Philadelphia; Allen Greenwood, Boston, and Albert E. Bulson, Jr., Fort Wayne, Ind.

Dr. Sanford R. Gifford, Omaha, read a paper on "Allergic and Toxic Properties of Lens Protein." Discussed by Drs. F. H. Verhoeff, Boston; Arnold Knapp, New York; Albert N. Lemoine, Kansas City, Mo., and Sanford R. Gifford, Omaha.

Dr. Thomas D. Allen, Chicago, read a paper on "Typhoid Vaccine in Ophthalmology." Discussed by Drs. Ben Witt Key, New York; Joseph D. Heitger, Louisville, Ky.; F. H. Verhoeff, Boston; Albert N. Lemoine, Kansas City, Mo.; C. D. Wescott, Chicago, and Thomas D. Allen, Chicago.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

WEDNESDAY, MAY 27—MORNING

The meeting was called to order by the chairman, Dr. Charles W. Richardson, Washington, D. C.

Dr. Charles W. Richardson, Washington, D. C., read the chairman's address, entitled, "Problem of the Near Deaf and the Deaf."

Dr. Lee W. Dean, Iowa City, read a paper on "Paranasal Sinus Disease in Infants and Young Children." Discussed by Drs. John J. Shea, Memphis, Tenn.; T. E. Carmody, Denver; Robert F. Ridpath, Philadelphia; Joseph H. Abraham, New York; H. I. Lillie, Rochester, Minn.; Sidney Israel, Houston, Texas, and Lee W. Dean, Iowa City.

Dr. Robert C. Lynch, New Orleans, read a paper on "Operations of the Accessory Sinuses." Discussed by Drs. Joseph C. Beck, Chicago; Homer Dupuy, New Orleans; M. M. Cullom, Nashville, Tenn.; Charles W. Richardson, Washington, D. C., and Robert C. Lynch, New Orleans.

Dr. Ross H. Skillern, Philadelphia, read a paper on "Intranasal and External Methods of Operating on the Ethmoid Cells: A Critical Consideration." Discussed by Dr. John F. Barnhill, Indianapolis.

Dr. G. E. Pfahler, Philadelphia, read a paper on "Electrocoagulation and Radiation in the Treatment of Malignant Diseases of Ear, Nose and Throat." Discussed by Drs. J. Douglas Morgan, Philadelphia; Joseph C. Beck, Chicago, and G. E. Pfahler, Philadelphia.

Dr. Joseph C. Beck, Chicago, presented the report of the American Board of Otolaryngology.

THURSDAY, MAY 28—MORNING

The meeting was called to order at 9 o'clock by the chairman.

Drs. Chevalier Jackson, Gabriel Tucker, Louis H. Clerf, Robert M. Lukens and William F. Moore, Philadelphia, presented a paper on "Hematemesis." Discussed by Drs. E. J. G. Beardsley, Philadelphia; H. B. Orton, Newark, N. J.; Ellen J. Patterson, Pittsburgh; William B. Chamberlin, Cleveland; Leon T. LeWald, New York, and Chevalier Jackson, Philadelphia.

Dr. George F. Keiper, Lafayette, Ind., presented the following resolution:

> In view of the magnificent work done by the American Federation of Organizations for the Hard of Hearing in improving the condition and status of the deafened; be it
>
> *Resolved*, By the Section on Laryngology, Otology and Rhinology of the American Medical Association that it heartily endorses the work of the American Federation of Organizations for the Hard of Hearing and commends it to the entire medical profession and public; and be it further
>
> *Resolved*, That this resolution be referred to the House of Delegates of the American Medical Association for its endorsement.

Dr. Keiper moved the adoption of this resolution. Motion seconded and carried.

Dr. Porter P. Vinson, Rochester, Minn., read a paper on "Pharyngo-Esophageal Diverticula: Diagnosis and Preoperative Management." Discussed by Drs. Frank H. Lahey, Boston; Chevalier Jackson, Philadelphia; Samuel Iglauer, Cincinnati, and Porter P. Vinson, Rochester, Minn.

Dr. C. F. Yerger, Chicago, read a paper on "The Cerebrospinal Fluid as an Index of Otorhinogenic Intracranial Complications." Discussed by Drs. Wells P. Eagleton, Newark, N. J.; Homer Dupuy, New Orleans, and C. F. Yerger, Chicago.

Dr. Leon E. White, Boston, read a paper on "Papilledema of Otitic Origin." Discussed by Drs. George M. Coates, Philadelphia; C. F. Yerger, Chicago, and Leon E. White, Boston.

Dr. A. W. Adson, Rochester, Minn., read a paper on "Anastomosis of the Facial and Spinal Accessory Nerves." Discussed by Drs. H. I. Lillie, Rochester, Minn.; J. M. Potts, Omaha; Leon E. White, Boston; C. C. Coleman, Richmond, Va.; Tom A. Williams, Washington, D. C., and A. W. Adson, Rochester, Minn.

The report of the Committee on Otorhinologic Hygiene of Swimming was presented, and the committee continued. This was confirmed by motion, duly seconded and carried.

Dr. Virginius Dabney, Washington, D. C., read a paper on "Infection of Tonsilloglottic Region Associated with Cervical Cellulitis: Ten Cases with Four Deaths."

Dr. William B. Chamberlin, Cleveland, read a paper on "A Possible Means for the Prevention of Deep Cervical Abscess Following the Removal of the Tonsils Under Local Anesthesia."

These two papers were discussed by Drs. Otto Glogau, New York; George F. Keiper, Lafayette, Ind.; Abraham Zingher, New York; Leon E. White, Boston; C. F. Yerger, Chicago; W. W. Carter, New York; Sidney Israel, Houston, Texas; Charles W. Richardson, Washington, D. C.; Oscar Wilkinson, Washington, D. C.; Virginius Dabney, Washington, D. C., and William B. Chamberlin, Cleveland.

FRIDAY, MAY 29—MORNING

The meeting was called to order at 9 o'clock by the chairman.

The following officers were elected: chairman, Dr. Samuel Iglauer, Cincinnati; vice chairman, Dr. Horace Newhart, Minneapolis; secretary, Dr. William V. Mullin, Colorado Springs, Colo.; delegate, Dr. Burt R. Shurly, Detroit; alternate, Dr. Lee W. Dean, Iowa City.

Dr. Myron Metzenbaum, Cleveland, presented full vision operating spectacles.

Dr. Abraham J. Shekter, Jamaica, N. Y., exhibited an endoscope for closing safety pins; also a hand suction irrigation nasal douche.

Dr. Samuel Iglauer, Cincinnati, exhibited a tracheal speaking cannula. This consists of a shutter valve inserted in a tracheal cannula. This valve opens on inspiration of air, and automaticlly closes when the patient speaks.

Preceding the Report of the Committee on Necrology, Dr. W. B. Chamberlin read the following letter from Dr. Emil Mayer, the chairman of that committee:

> Owing to continued ill health, I beg to tender herewith my resignation as chairman of the permanent Committee on Necrology of the Section on Laryngology, Rhinology and Otology of the American Medical Association.
>
> I have served the section in that capacity to the best of my ability ever since a permanent committee was formed, recording the passing of our co-workers, placing on our records for all time an appreciation of their scientific work as well as our affectionate regard for their memory. In this I have always had the cordial cooperation of my fellow members of the committee, Dr. W. B. Chamberlin and Dr. Thomas J. Harris.
>
> For the honor extended me by the section in naming me as chairman of this important committee, I beg to extend my warmest thanks.

It was moved by Dr. Chamberlin that the secretary of the section communicate with Dr. Mayer, expressing the sympathy of the section and also its appreciation of his long continued service to American laryngology. Motion seconded by Dr. George F. Keiper and carried.

It was moved by Dr. Harold M. Hays, New York, that the resignation of Dr. Mayer be accepted, with regret. Motion seconded and carried.

The report of the Necrology Committee was read by Dr. W. B. Chamberlin, Cleveland. Moved by Dr. D. J. McDonald, New York, that the report be received and filed and spread on the minutes of the section. Motion seconded and carried.

The chairman appointed Dr. W. B. Chamberlin, Cleveland, chairman of the permanent Committee on Necrology.

Dr. W. B. Chamberlin, Cleveland, read the report of the Committee on Lye Legislation. Moved by Dr. Chamberlin that the report be accepted and spread on the minutes and the committee continued; also that a vote of thanks be extended to Dr. Jackson as well as to the other men who worked for the passage of this bill. Motion seconded and carried.

Dr. D. J. McDonald, New York, offered a discussion of the report of the Committee on Otorhinologic Hygiene of Swimming, presented at the Thursday session. On motion of Dr. Harold M. Hays, New York, duly seconded, this discussion was read by title, to be printed in connection with the report.

The secretary read the report of the Committee on Education of the Deaf Child. Moved by Dr. W. B. Chamberlin, Cleveland, that the report be accepted and the committee continued, and that the retiring chairman appoint the additional members of the committee. Motion seconded and carried.

Dr. Harold M. Hays, New York, offered the following resolution:

In view of the number of committees which have to report before this section at each annual meeting, and because the work of the Committee on Education of the Deaf Child and the Committee on the Problems of the Hard of Hearing is so closely associated; be it

Resolved, That these two committees be combined and be called the Committee on the Deaf; and be it further

Resolved, That the chairman of this committee be the permanent chairman of the Committee on the Deaf Child, and that he appoint a subcommittee on the Problems of the Adult Hard of Hearing; and be it further

Resolved, That the chairman appoint on his committee one member of the section from each state so that he will be represented in every part of the country.

Moved by Dr. W. B. Chamberlin, Cleveland, that the resolution be adopted. Motion seconded and carried.

Dr. Harold M. Hays, New York, read a paper on "Local Immunization of Tissues in the Nose, Throat and Ear by Bacterial Vaccines." Discussed by Drs. Thomas S. Winslow, New York; George Piness, Los Angeles; Abraham Zingher, New York; Alfred Kahn, New York; G. M. Waldeck, Detroit, and Harold M. Hays, New York.

Dr. George Piness, Los Angeles, read a paper on "Allergy as Related to Otolaryngology." Discussed by Drs. Andrew A. Eggston, New York, and George Piness, Los Angeles.

Dr. Walter A. Wells, Washington, D. C., read a paper on "Hydrorrhea Rhinalis and Allied Neuroses, Considered Especially with Reference to the Parasympathetic Nervous System." Discussed by Drs. Joseph D. Heitger, Louisville, Ky.; Myer Solis-Cohen, Philadelphia; Tom A. Williams, Washington, D. C.; Robert K. Cutter, Oakland, Calif., and Walter A. Wells, Washington, D. C.

Dr. Mark J. Gottlieb, New York, read a paper on "The Relation of Intranasal Disease in the Production of Bronchial Asthma: Report of Cases." Discussed by Drs. I. S. Kahn, San Antonio, Texas, and Mark J. Gottlieb, New York.

Dr. Dana W. Drury, Boston, read a paper on "The Endocrine Factor in Otosclerosis." Discussed by Drs. J. A. Stucky, Lexington, Ky.; Arnold B. Kauffman, Syracuse, N. Y., and Dana W. Drury, Boston.

SECTION ON DISEASES OF CHILDREN

Wednesday, May 27—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. E. J. Huenekens, Minneapolis.

Dr. E. J. Huenekens, Minneapolis, read the chairman's address.

Dr. Lawrence W. Smith, Boston, read a paper on "Treatment of Pertussis by Roentgen Ray: Analysis of Eight Hundred and Fifty Cases." Discussed by Drs. I. A. Abt, Chicago; Julius Hess, Chicago, and L. W. Smith, Boston.

Drs. J. C. Montgomery and W. C. C. Cole, Detroit, presented a paper on "Value of Spinal Drainage in the Treatment of Acute Poliomyelitis." No discussion.

Dr. George E. Baxter, Chicago, presented the report of the Committee on the investigation of Proprietory Foods. Moved that these recommendations be referred by the official delegate, Dr. I. A. Abt, to the House of Delegates. Motion seconded and carried.

Dr. L. W. Sauer, Evanston, Ill., read a paper on "Neonatal Pyelitis." Discussed by Drs. C. G. Grulee, Chicago; H. A. Royster, Raleigh, N. C.; Myer Solis Cohen, Philadelphia; S. A. Loewenberg, Philadelphia, and L. W. Sauer, Evanston, Ill.

Dr. R. D. Moffett, New York, read a paper on "Observations During the Last Ten Years on Pneumonia." Discussed by Drs. Frank Vander Bogert, Schenectady, N. Y.; Louis Fischer, New York; E. A. Risenfeld, New York; I. A. Abt, Chicago; L. R. deBuys, New Orleans; John L. Morse, Boston; E. C. Fleischner, San Francisco, and R. D. Moffett, New York.

Dr. Myer Solis Cohen, Philadelphia, read a paper on "A Method for Eliminating the Etiologic Organisms in Treating Endocarditis in Children." Discussed by Drs. E. C. Fleischner, San Francisco; Benjamin Kramer, Baltimore, and Myer Solis Cohen, Philadelphia.

Thursday, May 28—Afternoon

Dr. M. G. Peterman, Rochester, Minn., read a paper on "Ketogenic Diet in Epilepsy." Discussed by Drs. E. C. Fleischner, San Francisco; R. H. Spangler, Philadelphia, and M. G. Peterman, Rochester, Minn.

The chairman appointed Drs. H. A. Royster, Raleigh, N. C., and F. P. Gengenbach, Denver, to serve on the Executive Committee, Drs. B. S. Veeder, St. Louis, and H. F. Helmholz, Rochester, Minn., being absent.

Dr. C. G. Grulee, Chicago, read a paper on "Treatment of Intracranial Hemorrhage in the New-Born." Discussed by Drs. J. B. Sidbury, Wilmington, N. C.; Joseph Wall, Washington, D. C.; J. A. Foote, Washington, D. C.; S. J. Wilson, Brooklyn; J. M. Brady, St. Louis; E. V. Davis, Chicago; Herman Schwartz, New York, and C. G. Grulee, Chicago.

Dr. John A. Foote, Washington, D. C., read a paper on "Static Peritonitis in Athreptic Children." No discussion.

Dr. I. H. Goldberger, New York, read a paper on "Thyroid Incidence Among School Girls of New York City." Discussed by Drs. E. C. Fleischner, San Francisco; G. D. Scott, New York; M. B. Gordon, Brooklyn, and I. H. Goldberger, New York.

Dr. M. Hines Roberts, Atlanta, Ga., read a paper on "Study of the Spinal Fluid in New-Born Children." Discussed by Drs. J. L. Morse, Boston; S. J. Wilson, Brooklyn; E. C. Fleischner, San Francisco, and M. H. Roberts, Atlanta, Ga.

Friday, May 29—Afternoon

The following officers were elected: chairman, Dr. C. G. Grulee, Chicago; vice chairman, Dr. Leslie Moore, Dallas, Texas; secretary, Dr. Hugh McCulloch, St. Louis; executive Committee, Dr. H. A. Royster, Raleigh, N. C., and Dr. F. P. Gengenbach, Denver; delegate, Dr. I. A. Abt, Chicago; member of Jacoby Fund, Dr. Fritz Talbot, Boston.

Dr. Martha M. Eliot, New Haven, Conn., read a paper on "The Control of Rickets." Discussed by Drs. E. A. Park, New Haven, Conn.; Victor Greenebaum, Cincinnati; Benjamin Kramer, Baltimore; May Wilson, New York; C. G. Grulee, Chicago; C. E. A. Winslow, New Haven, Conn.; J. M. Brady, St. Louis; H. J. Gerstenberger, Cleveland; J. A. Foote, Washington, D. C.; Julius Hess, Chicago, and Martha M. Eliot, New Haven Conn.

Dr. E. A. Riesenfeld, New York, read a paper on "Blood Phosphorus in the New-Born: Seasonal Variation and Relation to Rickets." No discussion.

Drs. H. J. Gerstenberger, and J. D. Nourse, Cleveland, presented a paper on "Are Perthes' Disease, Köhler's Disease, Schlatter's Disease and Scheuermann's Disease and Similar Conditions Different Manifestations of One and the Same Process?" Discussed by Drs. G. I. Bauman, Cleveland, and H. J. Gerstenberger, Cleveland.

Dr. Stafford McLean, New York, read a paper on "Blood Platelet Counts in Infants and Young Children." Discussed by Drs. E. C. Fleischner, San Francisco; E. R. Coffey, Kansas City, Mo., and Stafford McLean, New York.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

Wednesday, May 27—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. Paul D. White, Boston.

The following papers were read as a sympsium on "Medicine and Treatment":

Dr. George F. Dick, Chicago: "The Therapeutic Results with Scarlet Fever Antitoxin."

Dr. Abraham Zingher, New York: "The Dick Test and Active Immunization with Scarlatinal Toxin: Further Results."

These two papers were discussed by Dr. William H. Park, New York.

Drs. Foster M. Johns and S. Chaille Jamison, New Orleans, read a paper on "Treatment of Amebiasis with Stovarsol (Oxyaminophenylarsenic Acid) Administered Orally. No discussion.

Dr. Paul D. Lamson, Baltimore, read a paper on "The Pharmacology, Toxicology and Therapeutic Use of Carbon

Tetrachlorid." Discussed by Drs. W. G. Smillie, Andalusia, Ala., and Foster M. Johns, New Orleans.

Dr. J. A. Bargen, Rochester, Minn., read a paper on "Etiology of Chronic Ulcerative Colitis: Further Studies with Results of Specific Therapy." Discussed by Drs. Frank C. Yeomans, New York, and F. M. Drennan, Chicago.

Two applications for Associate Membership were voted on and accepted, their names to be transmitted to the House of Delegates: Marion Sylvester Dooley, professor, Department of Pharmacology, Syracuse University; Dr. Marie Severac, research worker, Dermatological Research Laboratory (working with Dr. G. W. Raiziss).

Dr. C. A. Mills, Cincinnati, read a paper on "Blood Coagulation and Its Control." No discussion.

THURSDAY, MAY 28—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman.

The following men were appointed to serve on the nominating committee: Drs. R. A. Hatcher, New York; Willard J. Stone, Pasadena, Calif., and Paul V. Ledbetter, Houston, Texas.

Dr. Paul D. White, Boston, read a paper on "Therapeutic Investigation." No discussion.

Dr. Frederick A. Coller, Ann Arbor, Mich., read a paper on "Lesions of the Extremities Associated with Diabetes Mellitus." Discussed by Dr. E. P. Joslin, Boston.

Dr. Roger I. Lee, Boston, read a paper on "The Use of Alcohol in Medical Practice." Discussed by Drs. William H. Pearce, Baltimore, and Albert E. Roussel, Philadelphia.

Dr. G. W. Raiziss, Philadelphia, read a paper on "The Chemotherapy of New Pentavalent Organic Compounds of Arsenic." Discussed by Dr. N. M. Keith, Rochester, Minn.

Dr. Charles E. Sevier, Colorado Springs, Colo., read a paper on "Heliotherapy, with Especial Reference to Spinal Tuberculosis." Discussed by Drs. G. B. Webb, Colorado Springs, Colo., and F. C. Johnson, New Brunswick, N. J.

FRIDAY, MAY 29—AFTERNOON

The meeting was called to order at 2:10 by the chairman.

The following officers were elected: chairman, Dr. Thomas Ordway, Albany, N. Y.; vice chairman, Dr. W. deB. MacNider, Chapel Hill, N. C.; secretary, Dr. Norman M. Keith, Rochester, Minn.; Executive Committee: Drs. Paul J. Hanzlik, San Francisco; Paul D. White, Boston, and Thomas Ordway, Albany, N. Y.; delegate, Dr. Paul D. White, Boston; alternate, Dr. Cary Eggleston, New York.

Dr. Robert A. Hatcher, New York, read a "Report on Revision of Pharmacopeia." Discussed by Drs. E. Fullerton Cook, Philadelphia, and H. C. Wood, Philadelphia.

Dr. Howard B. Sprague, Boston, read a paper on "Disturbances of Vision Due to Digitalis." Discussed by Drs. J. B. Guthrie, New Orleans, A. I. Rubenstone, Philadelphia.

Dr. James W. Sherrill, LaJolla, Calif., read a paper on "Changes in Red Cell Volume in Nephritis." Discussed by Dr. Norman M. Keith, Rochester, Minn.

Dr. J. L. Gamble, Boston, read a paper on "The Diuretic Action of Acid-Producing Salts." Discussed by Drs. Benjamin Jablons, New York, and J. L. Gamble, Boston.

Drs. L. G. Rowntree and Norman M. Keith, Rochester, Minn., and C. W. Barrier, Fort Worth, Texas, presented a paper on "The Therapeutic Use of Novasurol in Ascites and Edema." No discussion.

SECTION ON PATHOLOGY AND PHYSIOLOGY

WEDNESDAY, MAY 27—MORNING

The meeting was called to order at 9:30 by the chairman, Dr. Charles W. Greene, Columbia, Mo.

Dr. Greene read the chairman's address, entitled "The Physiology of Oxygen Availability in Health and Disease."

Dr. J. S. Horsley, Jr., Richmond, Va., read a paper on "Experimental Study of the Healing of Arteries After Different Methods of Ligation." No discussion.

A resolution was read by Dr. Lloyd Arnold, Chicago, and put in the form of a motion that the Section on Pathology and Physiology respectfully request the House of Delegates to consider the advisability and possibility of establishing a journal devoted to pathology, under the auspices of the American Medical Association, similar to the journals already established in other fields. The motion was discussed by Drs. Harry J. Corper, Denver, and J. J. Moore, Chicago, and carried.

A committee was appointed to shape the resolution and present it to the House of Delegates. Drs. Lloyd Arnold, Chicago, and J. J. Moore, Chicago, were appointed on this committee.

A nominating committee was appointed to consist of Drs. A. J. Carlson, Chicago; John A. Kolmer, Philadelphia, and Lloyd Arnold, Chicago.

Drs. Ralph A. Kordenat and Frank Smithies, Chicago, presented a paper on "The Phenomena Concerned with 'Reactions' Following the Transfusion of Blood: Clinical and Experimental Investigations." Discussed by Drs. F. W. Hartman, Detroit; Henry F. Stoll, Hartford, Conn.; Andrew A. Eggston, New York, and Martin L. Janes, New York.

Dr. F. S. Hammett, Philadelphia, read a paper on "Puberty as a Factor in the Chemistry of Bone Growth." Discussed by Drs. Alfred F. Hess, New York, and R. G. Hoskins, Columbus, Ohio.

Dr. Alfred F. Hess, New York, read a paper on "The Specific Activation of Foods, Cholesterol and Phytosterol by Ultraviolet Irradiation." No discussion.

Drs. F. W. Hartman and A. Bolliger, Detroit, presented a paper on "The Curve of Inorganic Blood Phosphates During Sugar Tolerance Test: Its Significance in Diagnosis and Prognosis." Discussed by Dr. Roger R. Hannon, New York.

Dr. Thomas Luther Byrd, Milwaukee, read a paper on "Studies of Quantitative Blood Sugar Estimation." Discussed by Dr. Victor C. Myers, Iowa City.

Dr. C. D. Leake, Madison, Wis., read a paper on "Regulation of Red Blood Cell Production." Discussed by Drs. Alfred Stengel, Philadelphia; William Thalhimer, Milwaukee, and Shepard Shapiro, New York.

THURSDAY, MAY 28—AFTERNOON

A joint meeting was held with the Section on Gastro-Enterology and Proctology. For a report of the proceedings, see the minutes of that section.

FRIDAY, MAY 29—MORNING

The meeting was called to order at 9 o'clock by the chairman.

The following officers were elected: chairman, Dr. Harry J. Corper, Denver; vice chairman, Dr. R. G. Hoskins, Columbus, Ohio; secretary, Dr. Josiah J. Moore, Chicago; delegate, Dr. D. J. Davis, Chicago; alternate, Dr. J. J. Moore, Chicago.

The report of the delegate was presented by Dr. J. J. Moore.

Dr. Francis Lowell Burnett, Boston, read a paper on "Variations of the Intestinal Rate." Discussion by Dr. A. J. Carlson, Chicago.

Dr. William G. Exton, New York, read a paper on "Typing of Albumin Excretion." Discussed by Drs. John A. Kolmer, Philadelphia; A. J. Carlson, Chicago; Shepard Shapiro, New York, and William G. Exton, New York.

Dr. E. R. Saleeby, Philadelphia, read a paper on "Seminal Vesicles from Syphilitic Human Individuals: Histologic Study." Discussed by Dr. John A. Kolmer, Philadelphia.

Dr. H. J. Corper, Denver, read a paper on "Pathologic Changes in Lung from Use of Mercurochrome-220 Soluble." Discussed by Drs. John A. Kolmer, Philadelphia; G. D. Fussell, Clearfield, Pa.; E. C. White, Baltimore, and H. J. Corper, Denver.

Dr. Isaac Levin, New York, read a paper on "The Comparative Action of Electrothermic Coagulation and Intratumoral Insertion of Glass Capillaries of Radium Emanation on Malignant Tumors." Discussed by Drs. George E. Pfahler, Philadelphia; James F. Percy, Los Angeles; D. R. Morgan, Philadelphia; E. A. Case, Philadelphia, and George A. Wyeth, New York.

Dr. Leila Charlton Knox, New York, read a paper on "Epithelioma and Crural Ulcers."

Dr. Francis Carter Wood, New York, read a paper on "Cancer Immunity."

These two papers were discussed by Drs. Francis Carter Wood, New York; J. Shelton Horsley, Richmond, Va.; Isaac Levin, New York; E. A. Case, Philadelphia; A. J. Carlson, Chicago, and Francis Carter Wood, New York.

Dr. Carl P. Sherwin, New York, read a paper on "Quantitative Determination of Intestinal Putrefaction." Discussed by Drs. Anthony J. Bassler, New York; E. E. Smith, New York; Charles W. Greene, Columbia, Mo.; A. J. Carlson, Chicago, and Carl P. Sherwin, New York.

SECTION ON STOMATOLOGY

WEDNESDAY, MAY 27—MORNING

The meeting was called to order at 9:20 by the chairman, Dr. Carl W. Waldron, Minneapolis.

Dr. T. L. Gilmer, Chicago, moved that a committee be appointed to draw up resolutions in memory of Dr. Eugene S. Talbot. Motion seconded by Dr. Lucius W. Johnson, Navy School, Washington, D. C., and carried. The chairman appointed Dr. T. L. Gilmer, Chicago, as the committee.

Dr. Carl W. Waldron, Minneapolis, read the chairman's address, entitled "Maxillary Sinusitis." Discussed by Drs. T. L. Gilmer, Chicago; Robert H. Ivy, Philadelphia, and Carl W. Waldron, Minneapolis.

Dr. F. C. Grant, Philadelphia, read a paper on "Relief for the Pain in Carcinoma of the Face." Discussed by Drs. George E. Pfahler, Philadelphia; Henry K. Pancoast, Philadelphia; T. L. Gilmer, Chicago; B. R. Kirkendall, Columbus, Ohio; F. A. Figi, Rochester, Minn., and F. C. Grant, Philadelphia.

Dr. Budd C. Corbus, Chicago, read a paper on "Diathermy in Stomatology." Discussed by Drs. George A. Wyeth, New York; Douglas Morgan, Philadelphia; O. L. Norsworthy, Houston, Texas; Lucius W. Johnson, Washington, D. C.; C. R. Edwards, Baltimore; G. E. Ward, Baltimore; E. L. Hergert, Brooklyn, and Budd C. Corbus, Chicago.

Dr. Fulton Risdon, Toronto, Canada, read a paper on "Arthroplasty of the Temporomaxillary Joint." Discussed by Drs. T. E. Carmody, Denver; Robert Ivy, Philadelphia; Herbert A. Potts, Chicago, and Fulton Risdon, Toronto, Canada.

THURSDAY, MAY 28—MORNING

The meeting was called to order at 9:15 by the chairman.

Dr. James R. Cameron, Philadelphia, read a paper on "Osteomyelitis of the Mandible." Discussed by Drs. Robert H. Ivy, Philadelphia; M. I. Schamberg, New York; E. G. Ramsdell, New York; Douglas Parker, New York; W. W. Millias, Rome, N. Y., and James R. Cameron, Philadelphia.

Dr. D. J. McCarthy, Philadelphia, read a paper on "Influence of the Focal Infections on the System, with Especial Reference to Nervous Conditions." Discussed by Drs. George M. Dorrance, Philadelphia; William A. Jaquette, Philadelphia; Dudley E. Mackey, Bloomfield, N. J.; James R. Cameron, Philadelphia; Carl W. Waldron, Minneapolis, and D. J. McCarthy, Philadelphia.

Dr. Will Walter, Chicago, read a paper on "Teeth and Eye Relations: Some Findings Correlated." Discussed by Drs. Edward H. Hatton, Chicago; Vilray P. Blair, St. Louis, and Will Walter, Chicago.

Dr. G. R. Harrison, Richmond, Va., read a paper on "Stones of the Salivary Glands and Ducts." Discussed by Drs. Vilray P. Blair, St. Louis; Robert H. Ivy, Philadelphia; Fulton D. Risdon, Toronto, Canada; M. I. Schamberg, New York; F. A. Figi, Rochester, Minn.; L. F. Crasson, Brooklyn, and G. R. Harrison, Richmond, Va.

A motion was made by Dr. Robert H. Ivy, Philadelphia, as follows:

That a request be made through the Committee on Scientific Assembly, which is responsible for these matters, for provision for five papers to occupy one session of the Section on Miscellaneous Topics at the meeting next year, and that a committee and secretary be appointed, either the present committee or a new committee, to arrange the program and attend to matters involving the interests of the Section on Stomatology.

Motion seconded by Dr. Douglas Parker, New York.

An amendment was offered to the motion by Dr. M. I. Schamberg, New York, as follows:

That if our subject matter be presented before the Section on Miscellaneous Topics, we also ask in this motion that the Section on Stomatology now existent be requested to have some one on the staff, either a secretary, chairman, or vice chairman, of the Section on Miscellaneous Topics, so that we may be given proper consideration in that section up to such time as they may reconsider the formation of a stomatologic section.

Amendment seconded by Dr. L. F. Crasson, Brooklyn, and accepted by the maker of the original motion, Dr. Robert H. Ivy, Philadelphia. Motion as amended carried.

FRIDAY, MAY 29—MORNING

The meeting was called to order at 9:25 by the chairman.

Dr. Lucius W. Johnson, Washington, D. C., read a paper on "Surgery of the Supra-Orbital Region." Discussed by Drs. Vilray P. Blair, St. Louis; Robert H. Ivy, Philadelphia, and Lucius W. Johnson, Washington, D. C.

Dr. Edward H. Hatton, Chicago, read a paper on "Relationship of Injury to a Tumor of the Parotid Region." Discussed by Drs. M. I. Schamberg, New York; F. A. Figi, Rochester, Minn.; George M. Dorrance, Philadelphia; Joseph A. Pettit, Portland, Ore.; Carl W. Waldron, Minneapolis, and Edward H. Hatton, Chicago.

Dr. G. V. Boyko, Passaic, N. J., read a paper on "An Unusual Palatal Tumor." Discussed by Drs. George M. Dorrance, Philadelphia; Robert H. Ivy, Philadelphia; F. A. Figi, Rochester, Minn.; Edward H. Hatton, Chicago; Carl W. Waldron, Minneapolis, and G. V. Boyko, Passaic, N. J.

A motion was offered by Dr. Robert H. Ivy, Philadelphia, duly seconded and carried, that the action of the previous day relative to discontinuance of the Section on Stomatology, be amended as follows:

That the Executive Committee be empowered to take up the matter of the continuance of the work of this Section with the Council on Scientific Assembly.

SECTION ON NERVOUS AND MENTAL DISEASES

WEDNESDAY, MAY 27—AFTERNOON

The meeting was called to order at 2:15 by the chairman, Dr. Edwin G. Zabriskie, New York.

Dr. Edwin G. Zabriskie, New York, read the chairman's address.

Dr. I. S. Wechsler, New York, read a paper on "Tonic Neck Reflexes in Tuberculous Meningitis." No discussion.

Dr. Charles Rosenheck, New York, read a paper on "Meralgia Paresthetica and Its Relation to Osteoarthritis of the Spinal Vertebrae." Discussed by Drs. I. S. Wechsler, New York, and Charles Rosenheck, New York.

Drs. G. B. Hassin and Peter Bassoe, Chicago, presented a paper on "Parkinsonian States: Clinical and Histopathologic Studies."

The paper of Drs. G. B. Hassin and Peter Bassoe was discussed by Drs. Theodore Diller, Pittsburgh; Charles Rosenheck, New York, and Peter Bassoe, Chicago.

Drs. J. L. Eckel, Buffalo, and N. W. Winkelman, Philadelphia, presented a paper on "Adiposis Dolorosa: A Clinicopathologic Study." Discussed by Drs. Walter Timme, New York; Theodore Diller, Pittsburgh; D. J. McCarthy, Philadelphia, and J. L. Eckel, Buffalo.

Dr. Maurice Packard, New York, read a paper on "The Diagnosis of Basilar Cerebral Hemorrhage." Discussed by Drs. Edwin G. Zabriskie, New York; Charles Rosenheck, New York, and Maurice Packard, New York.

Dr. Peter Bassoe, Chicago, was appointed to serve on the Executive Committee.

The following were appointed to serve on the Nominating Committee: Drs. H. G. Brainerd, Los Angeles; William Browning, Brooklyn, and J. L. Eckel, Buffalo.

THURSDAY, MAY 28—AFTERNOON

A paper on "Flaccid Paraplegia: Report of a Case," by Dr. Edward Livingston Hunt, New York, was presented. No discussion.

Dr. C. E. Locke, Cleveland, read a paper on "Interpretation of Ventriculograms by Studies of Casts of the Cerebral Ven-

tricles and Cerebral Subarachnoid Spaces." Discussed by Dr. Charles H. Frazier, Philadelphia.

Dr. Charles H. Frazier, Philadelphia, read a paper on "Accomplishments of Surgery in Lesions of the Pituitary Body, Based on a Review of One Hundred Cases of Pituitary Disorder." Discussed by Drs. W. G. Spiller, Philadelphia, and Charles H. Frazier, Philadelphia.

Dr. Irving H. Pardee, New York, read a paper on "Pituitary Neoplasms: Medical Treatment." Discussed by Drs. Tom A. Williams, Washington, D. C.; A. W. Adson, Rochester, Minn.; Marcus Neustaedter, New York; Julius Grinker, Chicago, and Irving H. Pardee, New York.

Dr. Loyal E. Davis, Chicago, read a paper on "The Influence of Decompressions on Experimentally Produced Choked Disks." Discussed by Drs. Julius Grinker, Chicago; T. B. Throckmorton, Des Moines, Iowa, and Loyel E. Davis, Chicago.

Drs. Marcus Neustaedter and W. W. Hala, New York, presented a paper on "The Relation of the Calcium Content of the Spinal Fluid to Postlumbar Puncture Headache." Discussed by Drs. Julius Grinker, Chicago; Irving Sands, Brooklyn; J. A. McIntosh, San Antonio, Texas; Paul Weston, Jamestown, N. Y., and Marcus Neustaedter, New York.

Dr. T. B. Throckmorton, Des Moines, Iowa, presented his report as the representative of the Section on Nervous and Mental Diseases in the House of Delegates.

FRIDAY, MAY 29—AFTERNOON

The meeting was called to order at 2:15 by the chairman.

The following officers were elected: chairman, Dr. J. B. Ayer, Boston; vice chairman, Dr. William House, Portland, Ore.; secretary, Dr. L. J. Pollock, Chicago; representative, Dr. T. B. Throckmorton, Des Moines, Iowa; alternate, Dr. Edward Delahanty, Denver.

Dr. Tom A. Williams, Washington, D. C., read a paper on "The Radical Cure of Neuroticism in Children." Discussed by Drs. S. A. Dunham, Buffalo; Alfred Gordon, Philadelphia, and Tom A. Williams, Washington, D. C.

Dr. Earl D. Bond, Philadelphia, read a paper on "Underestimation of Good Results in Mental Diseases: Facts in One Thousand and Twenty-Four Cases." Discussed by Drs. Alfred Gordon, Philadelphia, and Earl D. Bond, Philadelphia.

Dr. Irving J. Sands, Brooklyn, read a paper on "The Psychiatric Clinic in the General Hospital." Discussed by Drs. H. G. Brainerd, Los Angeles; W. J. Hickson, Chicago, and Irving J. Sands, Brooklyn.

Drs. Harry A. Solomon and Henry R. Viets, Boston, presented a paper on "Tryparsamide Treatment: Final Report." Discussed by Drs. J. B. Ayer, Boston; Julius Grinker, Chicago; Alfred Gordon, Philadelphia; Henry R. Viets, Boston, and George W. Raiziss, Philadelphia.

Dr. Alfred Gordon, Philadelphia, read a paper on "Alteration of Character, Disposition and Behavior as a Sequel of Epidemic (Lethargic) Encephalitis." Discussed by Drs. Irving J. Sands, Brooklyn; Henry R. Viets, Boston, and Alfred Gordon, Philadelphia.

Drs. Maurice Fremont-Smith and James B. Ayer, Boston, presented a paper on "Gastro-Intestinal Symptoms in Central Nervous System Syphilis." Discussed by Drs. Julius Grinker, Chicago, and James B. Ayer, Boston.

Dr. William Browning, Brooklyn, read a paper on "Epidemic (Lethargic) Encephalitis: A Common Etiologic Factor and Its Relation to Prevention." Discussed by Dr. E. G. Zabriskie, New York.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

WEDNESDAY, MAY 27—AFTERNOON

The meeting was called to order at 2:05 by the chairman, Dr. John E. Lane, New Haven, Conn.

The chairman said: In opening this session it is my sad duty to announce the death of a member of the Executive Committee, our chairman of two years ago, Dr. Marcus Haase. In doing this I cannot refrain from expressing my personal sorrow at the loss of a loyal friend. On the advice of the Executive Committee I have appointed Drs. Udo J. Wile, Ann Arbor, Mich., and Grover W. Wende, Buffalo, to prepare resolutions regarding his death.

Dr. Udo J. Wile, Ann Arbor, Mich., presented the following resolution:

On Dec. 15, 1924, Dr. Marcus Haase, for many years a Fellow of the Section on Dermatology and Syphilology of the American Medical Association, an active and earnest supporter of this section, and in 1923 its chairman, died at his home in Memphis, Tenn.

WHEREAS, In Marcus Haase's death the Section on Dermatology and Syphilology has lost a loyal and esteemed member; and

WHEREAS, the members of the section have lost in him an earnest well-wisher and good friend; therefore be it

Resolved, That the Section on Dermatology and Syphilology expresses its deep sense of loss and its profound regret at Dr. Haase's untimely passing, and be it further

Resolved, That these resolutions be inscribed on the minutes of this section and that a copy thereof, together with an expression of condolence, be sent to the family of our honored fellow member and late chairman.

The chairman said: With the unanimous consent of the section these resolutions will be spread on the minutes, and the recommendations for sending to the family will be adopted.

Dr. John E. Lane, New Haven, Conn., read the chairman's address, entitled "The Dermatologist-Syphilologist in the United States."

The chairman appointed Dr. Otto H. Foerster, Milwaukee, to serve on the Executive Committee in the place of Dr. Marcus Haase.

The chairman announced that at the request of headquarters in Chicago he had appointed a committee in regard to the control of cosmetics, consisting of Drs. Harold N. Cole, Cleveland; Udo J. Wile, Ann Arbor, Mich., and Francis E. Senear, Chicago.

Dr. Howard Fox, New York, presented a brief report of the Committee on Exhibit, followed by a brief report by Dr. Frederick D. Weidman, Philadelphia.

Dr. William H. Guy, Pittsburgh, moved a vote of thanks from the section to the Committee on Exhibit. Motion seconded and unanimously carried.

Dr. Howard Fox, New York, read a paper on "Leukoplakia Buccalis: Report of Fifty Cases." Discussed by Drs. Otto H. Foerster, Milwaukee; J. Frank Schamberg, Philadelphia; Henry H. Hazen, Washington, D. C.; Herman Goodman, New York, and Howard Fox, New York.

Dr. Clement H. Marshall, Memphis, Tenn., read a paper on "Syphilitic Elephantiasis of the Scrotum." Discussed by Dr. John H. Stokes, Philadelphia.

The following papers were read as a symposium on "Syphilis":

Drs. Frank C. Knowles and John B. Ludy, Philadelphia, and Henry B. Decker, Audubon, N. J.: "Routine Treatment of Syphilis at the Pennsylvania Hospital: Serologic and Clinical Results in One Thousand Cases."

Drs. Udo J. Wile and Harther L. Keim, Ann Arbor, Mich.: "Effect of Treatment on a Thousand or More Spinal Fluids."

Drs. John H. Stokes and Loren W. Shaffer, Philadelphia: "The Clinical Response and Management of the Tabetic."

Drs. Paul A. O'Leary and Marque O. Nelson, Rochester, Minn.: "Significance of the Negative Spinal Fluid in Neurosyphilis."

These four papers were discussed by Drs. Harold N. Cole, Cleveland; J. E. Moore, Batimore; Julius Grinker, Chicago; F. J. Eichenlaub, Washington, D. C.; John H. Stokes, Philadelphia; J. Frank Schamberg, Philadelphia; Henry F. Stoll, Hartford, Conn.; Henry H. Hazen, Washington, D. C.; Frank C. Knowles, Philadelphia; Loren W. Shaffer, Philadelphia, and Paul A. O'Leary, Rochester, Minn.

THURSDAY, MAY 28—AFTERNOON

The meeting was called to order at 2:05 by the chairman.

Drs. Fred Wise and J. J. Eller, New York, presented a paper on "Recklinghausen's Disease Without Tumor Formation: Incomplete or Abortive Forms of the Affection." Discussed by Drs. John H. Stokes, Philadelphia; L. K. McCafferty, New York; Charles M. Williams, New York; Herman Goodman, New York; Fred Wise, New York, and J. J. Eller, New York.

Drs. John A. Gammel, Hagope G. Miskjian and H. S. Thatcher, Cleveland, presented a paper on "Madura Foot (Mycetoma) of the Black Grain Variety in a Native American." Discussed by Drs. Earl D. Crutchfield, Galveston, Texas; Frederick D. Weidman, Philadelphia, and John A. Gammel, Cleveland.

Drs. J. Lee Kirby-Smith, Jacksonville, Fla., and G. F. White and W. E. Dove, United States Bureau of Entomology, presented a paper on "Creeping Eruption." Discussed by Drs. G. F. White, Washington, D. C.; Everett S. Lain, Oklahoma City; Jeffrey C. Michael, Houston, Texas; C. D. Christ, Orlando, Fla.; I. L. McGlasson, San Antonio, Texas; Earle D. Crutchfield, Galveston, Texas; Frederick D. Weidman, Philadelphia, and J. Lee Kirby-Smith, Jacksonville, Fla.

Drs. Charles M. Williams and Herman Goodman, New York, presented a paper on "Livedo Reticularis." Discussed by Drs. John H. Stokes, Philadelphia; Paul A. O'Leary, Rochester, Minn.; Herman Goodman, New York, and Charles M. Williams, New York.

Dr. J. Frank Fraser, New York, read a paper on "Mycosis Fungoides: Its Relation to Lymphosarcoma and Leukemia." Discussed by Drs. Walter J. Highman, New York; Udo J. Wile, Ann Arbor, Mich.; Herman Feit, Jersey City, N. J., and J. Frank Fraser, New York.

Drs. John Eiman and Frederick D. Weidman, Philadelphia, presented a paper on "Extensive Congenital Pigmented Nevus of the Skin and Cerebrospinal Meninges: Its Relation to the Moot (Embryologic) Origin of Pigmented Cutaneous Nevus Cells." Discussed by Drs. Frederick D. Weidman, Philadelphia; Erwin P. Zeisler, Chicago, and John Eiman, Philadelphia.

Dr. Clark W. Finnerud, Chicago, read a paper on "Ulcus Vulvae Acutum." Discussed by Drs. John Butler, Minneapolis; Jeffrey C. Michael, Houston, Texas; Fred Wise, New York; M. B. Parounagian, New York; Paul A. O'Leary, Rochester, Minn., and Clark W. Finnerud, Chicago.

FRIDAY, MAY 29—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman.

The following officers were elected: chairman, Dr. Fred Wise, New York; vice chairman, Dr. William L. McBride, Kansas City, Mo.; delegate, Dr. Howard Fox, New York; alternate, Dr. Otto H. Foerster, Milwaukee.

Dr. Earl D. Osborne, Buffalo, read a paper on "Arsenic in the Tissue in Arsenical Keratoses, and in Epithelioma Developing in Psoriatic Lesions Following the Administration of Arsenic: Michrochemical Study." Discussed by Drs. Udo J. Wile, Ann Arbor, Mich.; E. E. Smith, New York, and Earl D. Osborne, Buffalo.

Dr. Robert E. Barney, Ann Arbor, Mich., read a paper on "General Analysis of Sweat: Preliminary Report." Discussed by Drs. J. Frank Schamberg, Philadelphia; E. E. Smith, New York; George C. Andrews, New York; W. A. Pusey, Chicago, and Robert E. Barney, Ann Arbor, Mich.

Dr. W. W. Duke, Kansas City, Mo., read a paper on "Physical Allergy as a Cause of Dermatoses."

Dr. Joseph V. Klauder, Philadelphia, read a paper on "The Cutaneous Neuroses, with Particular Reference to Psychotherapy."

These two papers were discussed by Drs. Walter J. Highman, New York; Everett S. Lain, Oklahoma City; Charles M. Williams, New York; John H. Stokes, Philadelphia; J. Frank Schamberg, Philadelphia; F. J. Eichenlaub, Washington, D. C.; Erwin P. Zeisler, Chicago; W. W. Duke, Kansas City, Mo., and Joseph V. Klauder, Philadelphia.

Drs. Hiram E. Miller and Laurence R. Taussig, San Francisco, presented a paper on "Cosmetics." Discussed by Drs. Harold N. Cole, Cleveland; Howard Fox, New York; L. K. McCafferty, New York; Lulu H. Peters, New York; William C. Woodward, Chicago; James H. Mitchell, Chicago, and Laurence R. Taussig, San Francisco.

Drs. George Miller MacKee and George C. Andrews, New York, presented a paper on "Ultraviolet Radiation in the Prophylaxis and Treatment of Acute Roentgen-Ray and Radium Reactions." Discussed by Drs. Howard Fox, New York; Fred Wise, New York; Jeffery C. Michael, Houston, Texas, and George C. Andrews, New York.

Dr. Frank E. Simpson, Chicago, read a paper on "Treatment of Intra-Oral Cancer with Radium Emanation: Report of One Hundred and Forty-One Cases." Discussed by Dr. Maurice Lenz, New York.

Dr. Sigmund S. Greenbaum, Philadelphia, read a paper on "Xanthoma Tuberosum cum Erythema Telangiectodes." Discussed by Drs. J. Frank Schamberg, Philadelphia; Fred Wise, New York, and Sigmund S. Greenbaum, Philadelphia.

SECTION ON UROLOGY

WEDNESDAY, MAY 27—MORNING

The meeting was called to order at 9:15 by the vice chairman, Dr. Robert V. Day, Los Angeles.

Owing to the death of the chairman, Dr. John T. Geraghty, and the absence of Dr. H. G. Bugbee, New York, Dr. Day appointed Dr. C. E. Burford, St. Louis, and Dr. A. L. Chute, Boston, to serve on the Executive Committee.

Dr. P. A. Rohrer, Seattle, read a paper on "The Urologist and Clinical Diagnosis: The Findings in Four Hundred Cases Referred by Internists for Urinary Tract Study." Discussed by Drs. Alexander Randall, Philadelphia; Louis Schmidt, Chicago; B. A. Thomas, Philadelphia; A. L. Chute, Boston; Alexander H. Peacock, Seattle; Irving Simons, Nashville, Tenn.; Lionel P. Player, San Francisco; Robert H. Herbst, Chicago; O. S. Lowsley, New York; C. E. Burford, St. Louis, and P. A. Rohrer, Seattle.

Dr. Lionel P. Player, San Francisco, read a paper on "Autonephrectomy: Experimental Production in Animals and New Method of Diagnosis."

Dr. Charles S. Vivian, Phoenix, Ariz., read a paper on "Technic for Orchidectomy When Both Epididymis and Testis Are Involved by Tuberculosis."

These two papers were discussed by Drs. A. L. Chute, Boston; C. M. Harpster, Toledo, Ohio; D. N. Eisendrath, Chicago; Clyde W. Collings, New York; W. R. Delzell, New York; Lionel P. Player, San Francisco, and Charles S. Vivian, Phoenix, Ariz.

Drs. Wilbur H. Haines and L. F. Milliken, Philadelphia, presented a paper on "The Influence of Morphin and Atropin on Renal Function."

Drs. Veader Leonard and Austin H. Wood, Baltimore, presented a paper on "The Present Status of Hexylresorcinol as an Internal Urinary Disinfectant."

These two papers were discussed by Drs. O. S. Lowsley, New York; Roy B. Henline, New York; Vincent J. O'Conor, Chicago; B. A. Thomas, Philadelphia; Clyde W. Collings, New York; C. E Burford, St. Louis; Alexander H. Peacock, Seattle; A. J. Crowell, Charlotte, N. C.; Leon Herman, Philadelphia; Lionel P. Player, San Francisco; Israel Kleiner, New Haven, Conn.; George Gilbert Smith, Boston; L. F. Milliken, Philadelphia, and Veader Leonard, Baltimore.

THURSDAY, MAY 28—MORNING

The meeting was called to order at 9:20.

The chairman appointed Dr. Clarence R. O'Crowley, Newark, N. J., to serve on the Executive Committee in place of Dr. C. E. Burford, St. Louis.

The following papers were read as a symposium on "Prostatectomy":

Dr. Parker Syms, New York: "Perineal Prostatectomy."

Dr. Edgar G. Ballenger, Atlanta, Ga.: "A Hemostatic Bag for Controlling Hemorrhage After Prostatectomy."

Dr. Austin I. Dodson, Richmond, Va.: "The Value of Blood Transfusion in Surgery of the Prostate."

Dr. Robert H. Herbst, Chicago: "Some Causes of Poor Functional Results Following Prostatectomy."

These four papers were discussed by Drs. A. L. Chute, Boston; Herman L. Kretschmer, Chicago; Alexander Randall, Philadelphia; Victor D. Lespinasse, Chicago; Daniel N. Eisendrath, Chicago; Clarence R. O'Crowley, Newark, N. J.; Leon Herman, Philadelphia; Irving Simons, Nashville, Tenn.; Clyde W. Collings, New York; C. M. Harpster, Toledo, Ohio; B. A. Thomas, Philadelphia; A. L. Chute, Boston; Paul Aschner, New York; W. C. Stirling, Washington, D. C.; P. S. Pelouze, Philadelphia; Parker Syms, New York; Edgar

G. Ballenger, Atlanta, Ga.; Austin I. Dodson, Richmond, Va., and Robert H. Herbst, Chicago.

Dr. Robert V. Day, Los Angeles, read the chairman's address, entitled "Urologic Problems of the General Practitioner, Internist and Surgeon." No discussion.

Dr. Vincent J. O'Conor, Chicago, read a paper on "Perirenal Sclerosis."

Drs. Daniel N. Eisendrath, Harry Katz and J. M. Glasser, Chicago, presented a paper on "Bladder Reflux."

These two papers were discussed by Drs. Roger C. Graves, Boston; Paul Aschner, New York; Herman L. Kretschmer, Chicago; Ralph L. Dourmashkin, New York; Robert H. Herbst, Chicago; Vincent J. O'Conor, Chicago, and Daniel N. Eisendrath, Chicago.

FRIDAY, MAY 29—MORNING

The meeting was called to order at 9:10.

The following officers were elected: chairman, Dr. B. A. Thomas, Philadelphia; vice chairman, Dr. W. B. Dakin, Los Angeles; delegate, Dr. A. L. Chute, Boston; alternate, Dr. Clarence R. O'Crowley, Newark, N. J.

The chairman appointed Dr. A. L. Chute, Boston, and Dr. Robert H. Herbst, Chicago, to serve on the Executive Committee in the place of Dr. Herman L. Kretschmer, Chicago, and Dr. H. G. Bugbee, New York.

Drs. B. H. Hager, Madison, Wis., and T. B. Magath, Rochester, Minn., presented a paper on "Etiology of Incrusted Cystitis." Discussed by Drs. George Gilbert Smith, Boston; A. L. Chute, Boston; B. A. Thomas, Philadelphia; Robert V. Day, Los Angeles, and B. H. Hager, Madison, Wis.

Dr. William C. Quinby, Boston, read a paper on "Teaching of Urology to Interns." Discussed by Drs. Robert H. Herbst, Chicago; A. L. Chute, Boston; B. A. Thomas, Philadelphia; I. L. Ohlman, Pittsburgh, and W. C. Quinby, Boston.

Dr. Victor G. Vecki, San Francisco, read a paper on "Fifty Years of Progress in the Treatment of Gonorrhea."

Dr. Theodore Baker, Pittsburgh, read a paper on "Nonvenereal Prostatitis."

Dr. Donald Macomber, Boston, read a paper on "Lowered Fertility in the Male."

These three papers were discussed by Drs. A. L. Wolbarst, New York; Victor D. Lespinasse, Chicago; William C. Bryant, Pittsburgh; I. L. Ohlman, Pittsburgh; Clyde W. Collings, New York; Victor D. Vecki, San Francisco; Theodore Baker, Pittsburgh, and Donald Macomber, Boston.

Dr. Daniel E. Shea, Hartford, Conn., read a paper on "Urinary Calculi: Their Chemical Composition and Structure in Relation to Radiography."

Dr. Alexander H. Peacock, Seattle, read a paper on "Impacted Calculi of the Ureter, Their Treatment and Result."

The chairman appointed Dr. Victor D. Lespinasse, Chicago, to serve on the Executive Committee, Dr. Robert H. Herbst, Chicago, having left.

The papers of Drs. Shea and Peacock were discussed by Drs. William E. Lower, Cleveland; W. C. Quinby, Boston; Daniel N. Eisendrath, Chicago; R. Arthur Hooe, Washington, D. C.; Victor D. Lespinasse, Chicago; Ralph L. Dourmashkin, New York; Charles S. Vivian, Phoenix, Ariz.; A. L. Chute, Boston; W. G. Schultz, Tucson, Ariz.; Daniel E. Shea, Hartford, Conn., and Alexander H. Peacock, Seattle.

SECTION ON ORTHOPEDIC SURGERY

WEDNESDAY, MAY 27—MORNING

The meeting was called to order at 9:15 by the chairman, Dr. F. J. Gaenslen, Milwaukee.

The following papers were read as a symposium on "Birth Injuries":

Dr. Samuel W. Boorstein, New York: "Birth Injuries Requiring Orthopedic Treatment."

Dr. James Warren Sever, Boston: "Obstetric Paralysis: Report of Eleven Hundred Cases, with Discussion of the Etiology, Pathology, Treatment and Operative Results."

These two papers were discussed by Drs. J. T. Rugh, Philadelphia; H. J. Fitzsimmons, Boston; G. I. Bauman, Cleveland; Samuel W. Boorstein, New York, and J. W. Sever, Boston.

Dr. Charles F. Painter, Boston, read a paper on "Osteomyelitis in the Innominate Bone." Discussed by Drs. M. S. Henderson, Rochester, Minn.; Fenwick Beekman, New York; Z. B. Adams, Boston, and Charles F. Painter, Boston.

Dr. M. S. Henderson, Rochester, Minn., was appointed to act on the Executive Committee in the place of Dr. H. B. Thomas, Chicago.

Dr. Russell A. Hibbs, New York, presented a paper on "End-Results in the Treatment of Knee Joint Tuberculosis at the New York Orthopedic Hospital." Discussed by Drs. C. F. Painter, Boston; Z. B. Adams, Boston; J. W. Sever, Boston, and Russell A. Hibbs, New York.

Dr. M. S. Henderson, Rochester, Minn., read a paper on "Ununited Fractures."

The paper by Dr. M. S. Henderson was discussed by Drs. Russell A. Hibbs, New York; P. D. Wilson, Boston; W. C. Campbell, Memphis, Tenn.; W. G. Stern, Cleveland; Frank Warner, Columbus, Ohio, and M. S. Henderson, Rochester, Minn.

Dr. R. G. Carothers, Cincinnati, read a paper on "Types of Colles' Fracture Based on Etiology." Discussed by Drs. M. L. Klinefelter, St. Louis; Frank Warner, Columbus, Ohio, and R. G. Carothers, Cincinnati.

Drs. Philip H. Kreuscher, Cloyd Arnold and William C. Austin, Chicago, presented a paper on "Relationship of Calcium and Phosphorus Metabolism to Normal and Abnormal Bone Changes: Preliminary Report." Discussed by Drs. M. S. Henderson, Rochester, Minn.; Joseph I. Nevins, Brooklyn; Lloyd Arnold, Chicago, and Frank Warner, Columbus, Ohio.

THURSDAY, MAY 28—MORNING

The meeting was called to order at 9:15 by the chairman, Dr. F. J. Gaenslen, Milwaukee.

Dr. James A. Dickson, Cleveland, read a paper on "Spinal Lesions in Adults." No discussion.

Dr. A. H. Brewster, Boston, read a paper on "Treatment of Lateral Curvature of the Spine by Means of a Turnbuckle Jacket." Discussed by Drs. J. W. Sever, Boston; L. W. Bacon, New Haven, Conn.; F. G. Murphy, Chicago; R. E. Stifel, Cleveland; Z. B. Adams, Boston; D. R. Telson, Brooklyn; F. R. Ober, Boston; F. J. Gaenslen, Milwaukee; J. P. Lord, Omaha, and A. H. Brewster, Boston.

Dr. F. J. Gaenslen, Milwaukee, read the chairman's address, entitled "The Care of the Cripple."

Dr. W. C. Campbell, Memphis, Tenn., read a paper on "The End-Results of Operation for the Correction of Drop Foot." Discussed by Drs. M. S. Henderson, Rochester, Minn.; M. N. Smith-Petersen, Boston; W. G. Stern, Cleveland; J. W. Sever, Boston; P. D. Wilson, Boston; Albertus Cotton, Baltimore; R. L. Diveley, Kansas City, Mo., and W. C. Campbell, Memphis, Tenn.

The following papers were read as a symposium on "Bone Infections":

Dr. Walter M. Brickner, New York: "Attenuated Bone Infections."

Dr. George I. Bauman, Cleveland: "Resection of Long Bones for Chronic Osteomyelitis."

These two papers were discussed by Drs. W. G. Stern, Cleveland; F. R. Ober, Boston; J. W. Sever, Boston; Fenwick Beekman, New York; James A. Dickson, Cleveland; S. L. McCurdy, Pittsburgh; Walter M. Brickner, New York, and George I. Bauman, Cleveland.

Dr. F. H. Ewerhardt, St. Louis, read a paper on "Diathermy in Joint Injuries." Discussed by Drs. H. D. Corbusier, Plainfield, N. J., and M. T. Koven, Brooklyn.

FRIDAY, MAY 29—MORNING

The following officers were elected: chairman, Dr. F. R. Ober, Boston; vice chairman, Dr. J. P. Lord, Omaha; secretary, Dr. J. A. O'Reilly, St. Louis; delegate, Dr. H. W. Orr, Lincoln, Neb.; alternate, Dr. M. S. Henderson, Rochester, Minn.

Dr. H. B. Philips, New York, read a paper on "Neuro-Arthropathies of Peripheral Nerve Injury Origin: Report of Two Cases." Discussed by Drs. R. H. Sayre, New York; A. W. Adson, Rochester, Minn.; W. C. Campbell, Memphis,

Tenn.; Charles Rosenbeck, New York; E. S. Johnson, Boston, and H. B. Philips, New York.

Dr. M. N. Smith-Petersen, Boston, read a paper on "End-Results on Arthrodesis of the Sacro-Iliac Joint in Tuberculous Cases." Discussed by Drs. W. C. Campbell, Memphis, Tenn.; M. S. Henderson, Rochester, Minn.; F. J. Gaenslen, Milwaukee; F. H. Albee, New York; F. R. Ober, Boston, and M. N. Smith-Petersen.

Dr. Z. B. Adams, Boston, read a paper on "Mechanics of Back Strain." Discussed by Drs. James A. Dickson, Cleveland; J. P. Lord, Omaha, and Z. B. Adams, Boston.

Dr. Fred H. Albee, New York, read a paper on "Reconstruction of the Hip Joint." Discussed by Drs. W. C. Campbell, Memphis, Tenn.; M. N. Smith-Petersen, Boston; M. S. Henderson, Rochester, Minn.; W. G. Stern, Cleveland; F. J. Gaenslen, Milwaukee, and Fred H. Albee, New York.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

WEDNESDAY, MAY 27—AFTERNOON

The meeting was called to order at 2:22 by the chairman, Dr. Ralph W. Jackson, Fall River, Mass.

Dr. Ralph W. Jackson, Fall River, Mass., read the chairman's address, entitled "The Correlation of Proctology with Other Specialties."

Drs. W. S. Thomas and E. A. Baumgartner, Clifton Springs, N. Y., presented a paper on "Stool Examinations for Protozoa in Eleven Hundred Inmates of a New York State Institution." Discussed by Drs. Charles G. Lucas, Louisville, Ky.; Sidney K. Simon, New Orleans; Anthony Bassler, New York, and W. S. Thomas, Clifton Springs, N. Y.

Drs. W. H. Foreman, Walter E. Pennington and Arthur G. Funkhouser, Indianapolis, presented a paper on "Hydrogen Ion Concentration of Stools: Its Estimation and Clinical Value." Discussed by Drs. A. H. Aaron, Buffalo; Francis L. Burnett, Boston; Zachary Sagal, New York; Anthony Bassler, New York; Simon P. Scherer, Martinsville, Ind.; A. J. Carlson, Chicago, and W. H. Foreman, Indianapolis.

Dr. Ernest H. Gaither, Baltimore, read a paper on "The Significance of Abdominal Pain: A Clinical Research." Discussed by Drs. John A. Lichty, Clifton Springs, N. Y.; Sidney K. Simon, New Orleans; John L. Kantor, New York, and Sidney A. Portis, Chicago.

Dr. Bruce C. Lockwood, Detroit, read a paper on "The Digestive Tract and Endocrine Function." Discussed by Drs. William Engelbach, St. Louis; A. J. Carlson, Chicago, and Bruce C. Lockwood, Detroit.

Drs. R. T. Vaughan and William A. Brams, Chicago, presented a paper on "Perforated Peptic Ulcer of the Stomach and the Duodenum: Early Diagnosis by a New Method (Roentgen-Ray Visualization of Spontaneous Pneumoperitoneum)." Discussed by Drs. John Dudley Dunham, Columbus, Ohio, and R. T. Vaughan, Chicago.

Dr. Frederick A. Speik, Los Angeles, read a paper on "The Healing of Peptic Ulcer." Discussed by Drs. Julius Friedenwald, Baltimore; Sidney A. Portis, Chicago; Anthony Bassler, New York, and F. A. Speik, Baltimore.

THURSDAY, MAY 28—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, who announced the following Nominating Committee: Drs. Anthony Bassler, New York; Collier F. Martin, Philadelphia, and Francis L. Burnett, Boston.

A joint meeting was held with the Section on Pathology and Physiology.

The following papers were read as a symposium on "Liver Function":

Dr. A. J. Carlson, Chicago: "Physiology of the Liver: Present Status of Our Knowledge."

Dr. George H. Whipple, Rochester, N. Y.: "Liver and Its Relation to Pigment Metabolism."

Dr. F. C. Mann, Rochester, Minn.: "Modified Physiologic Processes Following Total Removal of the Liver."

Dr. Carl H. Greene, Rochester, Minn.: "The Clinical Use of Tests of Liver Function."

Dr. Eugene L. Opie, Philadelphia: "Pathologic Physiology of the Liver in Relation to Intoxication and Infection."

Dr. Charles W. McClure, Boston: "Studies on Evaluation and Effect of Treatment."

Drs. B. B. Vincent Lyon and William Swalm, Philadelphia: "Nonsurgical Drainage of the Biliary Tract: Therapeutic Value."

These seven papers were discussed by Drs. L. G. Rowntree, Rochester, Minn.; Franklin W. White, Boston; Martin J. Synnott, Montclair, N. J.; J. Quincy Thomas, Norristown, Pa.; S. M. Rosenthal, Montreal, Canada; Robert H. Rose, New York; L. R. Whitaker, Boston; William H. Kremer, Wilmington, Del.; Daniel N. Silverman, New Orleans; A. J. Carlson, Chicago; G. H. Whipple, Rochester, N. Y.; F. C. Mann, Rochester, Minn.; Carl H. Greene, Rochester, Minn.; Eugene L. Opie, Philadelphia; Charles W. McClure, Boston, and B. B. Vincent Lyon, Philadelphia.

FRIDAY, MAY 29—AFTERNOON

The meeting was called to order by the chairman at 2:10.

The following officers were elected: chairman, Dr. Sidney K. Simon, New Orleans; vice chairman, Dr. Jerome M. Lynch, New York; secretary, Dr. Frank Smithies, Chicago; delegate, Dr. Emmett H. Terrell, Richmond, Va.; alternate, Dr. B. B. Vincent Lyon, Philadelphia.

Drs. Percy B. Davidson, Boston, and Edouard Willocx, Brussels, Belgium, presented a paper on "Gastric Excretion of Neutral Red: Clinical and Experimental Data." Discussed by Drs. George M. Piersol, Philadelphia; A. J. Carlson, Chicago; Martin G. Vorhaus, New York, and Percy B. Davidson, Boston.

Dr. Martin E. Rehfuss, Philadelphia, read a paper on "Normal Gastric Digestion." Discussed by Drs. Seale Harris, Birmingham, Ala.; Frank Smithies, Chicago, and Martin E. Rehfuss, Philadelphia.

Dr. Seymour Basch, New York, read a paper on "The Differential Diagnosis Between Cancer and Other Gastric Conditions with Subacidity." No discussion.

Dr. W. A. Fansler, Minneapolis, read a paper on "The Relation of Tuberculosis to Fistula in Ano." Discussed by Drs. L. A. Buie, Rochester, Minn.; Collier F. Martin, Philadelphia; Ralph W. Jackson, Fall River, Mass., and W. A. Fansler, Minneapolis.

Dr. Russell S. Boles, Philadelphia, read a paper on "Some Reasons for Poor Results Following Gastro-Intestinal Surgery." Discussed by Dr. George P. Muller, Philadelphia.

SECTION ON MISCELLANEOUS TOPICS

MEETINGS ON RADIOLOGY

WEDNESDAY, MAY 27—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Preston M. Hickey, Ann Arbor, Mich.

Dr. Albert Soiland, Los Angeles, announced that the Council on Scientific Assembly had recommended a full Section on Radiology, and that the House of Delegates had unanimously created it.

Dr. Preston M. Hickey, Ann Arbor, Mich., read the chairman's address.

Dr. A. E. Barclay, Manchester, England, read a paper on "Problem of Malignant Disease from the Radiologist's Side." Discussed by Dr. B. H. Orndoff, Chicago.

The following papers were read as a symposium on "Gastric, Duodenal and Jejunal Peptic Ulcer":

Dr. Howard T. Karsner, Cleveland: "The Pathology of Peptic Ulcer."

Dr. Russell D. Carman, Rochester, Minn.: "The Roentgenologic Diagnosis of Peptic Ulcer."

Dr. Lewellys F. Barker, Baltimore: "Peptic Ulcer from the Internist's Standpoint."

Dr. James T. Case, Battle Creek, Mich.: "Gastric and Duodenal Roentgen-Ray Findings after Operation."

These four papers were discussed by Drs. Lewis G. Cole, New York; J. Shelton Horsley, Richmond, Va.; W. H. Stewart, New York; I. O. Palefski, New York; Seale Harris, Birmingham, Ala.; A. E. Barclay, Manchester, England;

Lewellys F. Barker, Baltimore, and James T. Case, Battle Creek, Mich.

On motion of Dr. Pancoast, Philadelphia, a vote of thanks was given to Dr. Barclay for having come such a distance to present his paper.

THURSDAY, MAY 28—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman.

Dr. William S. Newcomet, Philadelphia, read a paper on "The Control of Nonmalignant Uterine Hemorrhage by Radiation." Discussed by Drs. John H. Girvin, Philadelphia; G. M. Laws, Philadelphia; Henry Schmitz, Chicago; B. H. Orndoff, Chicago; Dudley E. Mackey, Bloomfield, N. J.; Oscar L. Norsworthy, Houston, Texas; John S. Derr, Atlanta, Ga., and William S. Newcomet, Philadelphia.

Dr. Burton J. Lee, New York, read a paper on "The Results of Radium Therapy for Recurrent Carcinoma of the Breast." Discussed by Drs. Henry K. Pancoast, Philadelphia; George E. Pfahler, Philadelphia; Henry Schmitz, Chicago, and Burton J. Lee, New York.

Drs. T. A. Groover, A. C. Christie and E. A. Merritt, Washington, D. C., presented a paper on "Roentgen-Ray Diagnosis and Treatment of Thymoma." Discussed by Drs. Henry K. Pancoast, Philadelphia, and M. M. Myers, Des Moines, Iowa.

Dr. Howard P. Doub, Detroit, read a paper on "Immediate Metabolic Effects Following Deep Roentgen-Ray Therapy: Prevention and Treatment of Untoward Reactions." Discussed by Drs. Henry Schmitz, Chicago; George E. Pfahler, Philadelphia, and Howard P. Doub, Detroit.

Dr. Fred M. Hodges, Richmond, Va., read a paper on "The Roentgen Ray in the Treatment of Local Inflammations, Cellulitis and Carbuncles." Discussed by Drs. Ross Golden, New York; I. S. Trostler, Chicago; A. L. Gray, Richmond, Va.; Dudley E. Mackey, Bloomfield, N. J.; Guy R. Harrison, Richmond, Va., and Fred M. Hodges, Richmond, Va.

Dr. Ernest C. Samuels, New Orleans, read a paper on "Thymus and the Treatment of Its Hyperfunction: Clinical and Roentgenologic Consideration." Discussed by Drs. I. S. Trostler, Chicago; Preston M. Hickey, Ann Arbor, Mich.; C. E. Piersall, Reno, Nev.; Maurice Lenz, New York; C. D. Chapell, Flint, Mich.; Henry K. Pancoast, Philadelphia; A. L. Gray, Richmond, Va., and Ernest C. Samuels, New Orleans, La.

FRIDAY, MAY 29—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman.

Dr. Isaac Gerber, Providence, R. I., read a paper on "Roentgen-Ray Treatment in Bronchial Asthma and Chronic Bronchitis." Discussed by Drs. Samuel Stern, New York, and Dr. Isaac Gerber, Providence, R. I.

Dr. B. H. Nichols, Cleveland, read a paper on "Kidney Stone as a Diagnostic Problem." Discussed by Drs. L. T. LeWald, New York; Daniel Eisendrath, Chicago; Henry K. Pancoast, Philadelphia; Edward S. Blaine, Chicago; Dudley E. Mackey, Bloomfield, N. J., and B. H. Nichols, Cleveland.

Dr. John E. Lane of the Council on Scientific Assembly addressed the meeting, giving the names of the officers appointed for the coming year for the new Section on Radiology, as follows: chairman, Dr. A. C. Christie, Washington, D. C.; vice chairman, Dr. Harry M. Imboden, New York; secretary, Dr. M. J. Hubeny, Chicago; Executive Committee: Drs. A. C. Christie, Washington, D. C.; Preston M. Hickey, Ann Arbor, Mich., and Willis F. Manges, Philadelphia.

Dr. Edward S. Blaine, Chicago, read a paper on "Manipulative Dislocations of the Atlas." Discussed by Drs. I. S. Trostler, Chicago; B. F. Buzby, Philadelphia, and Edward S. Blaine, Chicago.

Dr. John D. Camp, Boston, read a paper on "The Sella Turcica and the Significance of Changes in Its Roentgenographic Appearance." Discussed by Drs. L. T. LeWald, New York; Isaac Gerber, Providence, R. I.; Henry K. Pancoast, Philadelphia; M. B. Gordon, Brooklyn, and John D. Camp, Boston.

Dr. W. F. Henderson, Jackson, Miss., read a paper on "Antiperistalsis in the Duodenum: Further Observations." Discussed by Drs. L. A. Fortier, New Orleans; L. T. LeWald, New York, and W. F. Henderson, Jackson, Miss.

Dr. William A. Evans, Detroit, read a paper on "Deep Roentgen-Ray Exposure as an Aid in the Differential Diagnosis of Mediastinal Tumors." Discussed by Drs. E. C. Ernst, St. Louis, and William A. Evans, Detroit.

Dr. Lester R. Whitaker, Boston, read a paper on "Further Experiences with Cholecystography." Discussed by Drs. C. E. Piersall, Reno, Nev., and Lester R. Whitaker, Boston.

Dr. James T. Case, Battle Creek, Mich., was elected delegate, and Dr. E. C. Ernst, St. Louis, alternate.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit at Atlantic City was marked by the high quality of the exhibits and the excellence of their location. Commendation was frequent of the personal demonstrations of the exhibitors who explained the finer points of the demonstrations. Practically every exhibit served as a forum for discussions on the new advances in medicine and health education. Particularly interesting was the exhibit on syphilis under the auspices of the Section on Dermatology and Syphilology; the Committee in charge, composed of Drs. Howard Fox, W. A. Pusey and Fred Weidman, deserve praise for the systematic method of presentation of the subject by the investigators who collaborated in the exhibit. The Heart Study Group, which last year exhibited as a special committee authorized by the Board of Trustees, continued its work; this exhibit was exceptionally well demonstrated to interested spectators throughout the day. The two Special Exhibits, authorized by the Board of Trustees, were well attended: the Morbid Anatomy Exhibit received fresh material daily from Philadelphia, which was admirably demonstrated by Prof. Baldwin Lucké of the University of Pennsylvania; the Model Public Health Exhibit in Miniature was based on the public health exhibit given at Minneapolis last winter under the auspices of Dr. William O'Brien of the University of Minneapolis.

Except in the educational classification (where the work of organizations is exhibited), the material was presented in the name of the individual and not in the name of the institution where it was done, though the name of the institution appeared as part of the address. In line with this, the awards were made to individuals.

The total number of exhibits was sixty-five, and the number of participants was 134. A special feature was a section devoted to radiologic exhibits, with a semidarkened room in which shadow boxes and the like could be used effectively. Owing to the large number of exhibits, and the general excellence, space does not permit a description of individual demonstrations.

REPORT OF COMMITTEE ON AWARDS

Scientific Exhibit

The Committee on Awards reports:

Gold Medal to C. Latimer Callander, San Francisco, for (*a*) originality, (*b*) method of presentation, and (*c*) completeness of presentation of exhibit on surface capillaries in health and in disease.

Two silver medals are awarded, to the following:

Benjamin S. Kline and Samuel S. Berger, Mount Sinai Hospital, Cleveland: originality of exhibit on spirochetal pulmonary gangrene.

H. N. Cole and L. J. Karnosh, Cleveland: completeness of presentation of the effect of syphilis on the teeth.

Two bronze medals are awarded, to the following:

Alexander Randall, Philadelphia: demonstration of gross pathology of prostatic obstruction.

Thomas A. Menees and H. C. Robinson, Grand Rapids, Mich.: study on oral cholecystography.

The committee also awards certificates of merit to the following:

E. A. Doisy, St. Louis (pathology): demonstration of effects of corpus luteum extract.

H. B. Williams, New York (medicine): graphic registration of heart murmurs.

W. E. Lower and B. H. Nicholls, Cleveland (radiology): exhibit of roentgen-ray studies of diseases of the genito-urinary tract.

William Linn McBride and Charles Clayton Dennie, Kansas City (syphilology): exhibit illustrating prevention and control of the untoward effects of various drugs used in the treatment of syphilis.

Chevalier Jackson, Gabriel Tucker, Louis H. Clerf, Robert M. Lukens, and William F. Moore, Philadelphia (surgery): exhibit of bronchoscopic work.

American Heart Association (educational): exhibit on heart problems.

Honorable mention is given to:

Vilray P. Blair, St. Louis: exhibit on correction of deformities of the nose.

S. H. Mentzer, Rochester, Minn.: exhibit showing studies of diseases of the gallbladder.

Gordon New, Mayo Clinic of Mayo Foundation, Rochester, Minn.: exhibit of pathologic lesions of the nose and throat.

The committee particularly wishes to commend the work of the heart study group, consisting of Drs. George Blumer, New Haven; Alexander Lambert, New York (chairman of the group and ex-President of the American Medical Association); Emanuel Libman, New York, and S. Calvin Smith, Philadelphia. This exhibit was of exceptional educational value, and the committee regrets its inability to make an award to this group. (Awards are made to individuals.)

The work of the St. Elizabeth's Hospital Group, of Richmond, Va., also is commended.

The committee appreciates the work of the two special committees, that of the Model Public Health Exhibit in Miniature, and that on Morbid Anatomy, and feels that these features, which also were not open to awards, deserve especial praise. The committee would like to see the exhibits on morbid anatomy and pathology continued.

The committee desires to commend the general arrangement, neatness, lighting and freedom from confusion of the scientific exhibit, and recommends it as a model for future exhibits. The committee has been particularly impressed by the fact that there have been competent demonstrators in charge of the respective exhibits and that the legends have been well printed, making the exhibits more valuable to the visitors. Furthermore, the semidarkened room for radiology is a distinct help for exhibiting this type of work.

PRESTON M. HICKEY, Chairman.
H. H. HAZEN.
DEAN LEWIS.
JOSIAH J. MOORE.
ROGER S. MORRIS.

THE MOTION PICTURE THEATER

The Motion Picture Theater, run in connection with the Scientific Exhibit, operated continuously from noon to 6 on Monday, from 9 to 6 on Tuesday, Wednesday and Thursday, and from 9 to 5 on Friday. The Theater was located in a new auditorium on the second floor at the entrance to the Steel Pier, and about one-fourth mile from the Scientific Exhibit. As has now become customary, the Motion Picture Theater was run strictly on schedule. Considerable labor was required to operate this feature, fourteen people being needed for the theater alone. Thirty-nine speakers were scheduled for eighty-one periods. The talks were on topics of general interest, the emphasis of the program being placed on diagnosis and treatment of disease. An unusual event of the Motion Picture Theater program was the special demonstration of long distance heart diagnosis, made possible through the cooperation of the American Telephone and Telegraph Company and Dr. H. B. Williams of Columbia University. This involved several new scientific features: 1. A new apparatus has been devised whereby heart sounds can be amplified and transmitted through a series of electric filters, thereby eliminating many objectionable stethoscopic sounds; the filtered amplifications are then submitted to the cathode ray oscillograph, which makes it possible actually to see the graphic representation of the beating heart. 2. Pictures or graphs of the stethogram and also of the well known electrocardiogram were then sent to Chicago by telephone wire. This is the newest development of sending pictures, as the actual picture is sent and reproduced by means of apparatus using a photosensitive electric cell (it is not the well known code system of sending pictures). These pictures were received by a physician in Chicago. 3. The third important link of the demonstration was the long distance public address system. The audience of 1,500 at Atlantic City was able to hear clearly the conversation between the physician at Atlantic City and the one at Chicago, as the stethograms and electrocardiograms were discussed (the graphic charts were thrown on the screen for the audience while the discussion took place). The magnitude of the latter undertaking alone may be better appreciated when it is understood that it required more than 5,000 miles of high-grade telephone wire, an extensive loud speaker system at Atlantic City, and telephone microphones at both terminals.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Supreme Court Affirms Conviction of Chiropractor.—The conviction of U. G. Wiedman, a chiropractor of Montgomery, was affirmed by the Supreme Court of Alabama, May 14. Wiedman was fined in the lower court after conviction on a charge of treating human beings without a license from the state board; his case was taken to the court of appeals, which affirmed the lower court, and then to the supreme court.

CALIFORNIA

Associate Members of State Society.—The California Medical Association adopted an amendment to the constitution at the recent meeting in Yosemite Valley, whereby associate membership no longer includes members from the allied medical sciences. Only doctors of medicine, unlicensed to practice in the state, are eligible to associate membership, and all active, affiliate and associate members must be corresponding members of county societies and their dues be paid through county secretaries.

Plague Eradication.—*Public Health Reports* notes that among the rats examined at Los Angeles the week ending April 11, four were found plague infected; of the squirrels examined, none were plague infected. From November 5 to April 11, the number of rats examined were 81,604, and of these 173 were plague infected; 7,504 squirrels were examined during this period, and of these nine were infected. At Oakland, including other East Bay communities, twenty-one rats were found plague infected among 35,257 examined between January 1 and April 11.

"Bishop" Cosper Sentenced.—Wilbert LeRoy Cosper of Oakland, "D.D., Ph.D., Bishop," was sentenced, April 22, it is reported, to ninety days in jail and a fine of $600 for violation of the medical practice act in connection with the care of certain obstetric cases. Cosper is said to operate the "Christian Philosophical Institute," of Oakland, which advertises treatments for "health, happiness and prosperity personally or by mail." According to the San Francisco *Call*, when Cosper went into voluntary bankruptcy in 1924, the referee declared that the Christian Philosophical Institute was a "fraud factory" that turned out doctors of philosophy at $100 per degree and doctors of divinity at $50 each. After the recent trial (Cosper has been in trouble before), he is reported to have said "What is a fine of a few hundred dollars when one has been given a million dollars' worth of publicity?"

CONNECTICUT

State Medical Election.—At the meeting of the Connecticut State Medical Society, May 20, New Haven, Dr. Robert C. White, Willimantic, was elected president; Drs. Ernest R. Kelsey, Winsted, and Charles T. LaMoure, Mansfield Depot, vice presidents; Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, secretary, and Dr. Phineas H. Ingalls, Hartford, treasurer. The next annual meeting will be at New Haven, May 17-20, 1926.

DISTRICT OF COLUMBIA

Society News.—The executive committee of the Medical Society of the District of Columbia recently selected Dr. Oscar B. Hunter as the lecturer, under the terms of the James M. Kober Fund. Each third year the committee selects a candidate among members of this society, the Washington Academy of Sciences, the Washington Anthropological Society and the National Tuberculosis Association, who must be a doctor of medicine and not on the active list of the Army, Navy or Public Health Service. Dr. Hunter will give his lecture, March 28, 1926, at Georgetown University.——Dr. William J. Mallory addressed the Medical Society of the District of Columbia, May 13, on "A Problem in Insulin Therapy," and Dr. Albert E. Pagen, on "Sarcoma of the Uterus"; May 20, Dr. Charles S. White Spoke on "Appendicitis in Children," and Drs. Daniel L. Borden and Oscar B. Hunter on "Complete Colectomy for Nonspecific Ulcerative Colitis."

ILLINOIS

Chiropractic Bill Defeated.—The Booth bill providing for a separate licensing board for chiropractors was defeated in the state house of representatives, May 27, by a vote of 54 to 70.

Personal.—Dr. Irwin W. Bach, Champaign, has been appointed physician to the Cunningham Home, Urbana, to succeed Dr. William M. Honn.——Dr. C. St. Clair Drake, former director of the state department of public health, has been appointed acting field director of the National Child Health Association.——Dr. David O. Thompson has been appointed health officer of Sycamore.—Dr. Jay C. Simmons has been appointed city health physician of Canton to succeed Dr. T. C. Hays, resigned.——Dr. Harry G. Leon, for three years on the staff of the Dixon State Hospital, has resigned to enter private practice in Chicago.——Dr. George F. Johnson has been elected mayor of East Moline for the seventh consecutive term.——Dr. Clarence L. Whitmire has resigned his position at the Jacksonville State Hospital to accept a position with the U. S. Veterans' Bureau Hospital No. 62 at Augusta, Ga.

Chicago

Society News.—At the recent meeting of the Chicago Society for Internal Medicine, Dr. Karl K. Koessler was elected president; Dr. William F. Petersen, vice president, and Dr. Newell C. Gilbert, secretary.

Rush Alumni Contribute to Endowment Fund.—At a dinner at the Blackstone Hotel, June 5, the alumni of Rush Medical College made additional contributions of $66,950 toward the University of Chicago Endowment Fund, $30,000 of which was contributed by Dr. Frank Billings. Previous donations by the Rush alumni brought their total contribution up to $146,950.

INDIANA

The Publicity Bureau.—A newspaper editor recently said that he knows of no other group of articles in the state that are being accepted so wholeheartedly as the publicity articles of the Indiana State Medical Association. Following a recent article on goiter, there were several requests for speakers, one of whom went to Richmond, where the school authorities asked for a thousand copies of the bureau's article to be distributed among the school children. About seventy papers, with a total circulation of more than 500,000 in the state, publish the bureau's articles. The publicity bureau of the state medical association also aids newspapers and news bureaus in getting facts on medical news. The lecture work is carried on with the cooperation of the county medical societies. Luncheon and club publicity programs in some counties, after approval by the medical society, are put on by the clubs themselves. In one county the medical societies hold joint meetings with various clubs at the county seat. The following speakers recently represented the bureau of publicity in Indiana cities: Drs. George S. Bond, Edgar Kiser, Charles P. Emerson, Virgil H. Moon, Howard B. Mettel, Thomas J. Beasley, Joseph R. Eastman, Miles F. Porter, Jr., C. Norman Howard, Larue D. Carter and Maxwell A. Bahr.

IOWA

Society News.—The Scott County and Rock Island County Medical Societies held a joint meeting at Davenport, May 4. Following a dinner. Dr. W. F. Bovler, professor of ophthalmology, State University of Iowa College of Medicine, Iowa City, spoke on the "Problem of Lighting and Illumination as It Affects the General Practitioner," and Dr. Don M. Griswold of the department of preventive medicine, State University of Iowa College of Medicine, on "The Clinical Application of Some of the Newer Concepts of Immunity." This will be the last joint meeting until September.——The Iowa Clinical Medical Society met in Des Moines, May 12, and, following the presentation of cases, were hosts at a luncheon at the Grant Club. Dr. Frederick G. Murray, Cedar Rapids, was elected president; Dr. George W. Koch, Sioux City, vice president, and Dr. Russell C. Doolittle, Des Moines, secretary.——At the twenty-eighth annual meeting of the State Society Iowa Medical Women, Des Moines, May 12, Dr. Pauline M. Leader, Clarinda, was elected president; Dr. Emma M. Ackerman, Sioux City, vice president; Dr. Grace O. Doane, Des Moines, secretary, and Dr. Mary L. Tinley, Council Bluffs, treasurer.

KENTUCKY

Personal.—Dr. Harry P. Linn, Paducah, was recently elected president of the West Kentucky Medical Association; Drs. John F. Dunn, Arlington, and Charles Hunt, Clinton, vice presidents; Dr. James Vernon Pace, Paducah, secretary (reelected), and Dr. James T. Reddick, Paducah, treasurer (reelected).——Dr. James H. Hutchings, Maysville, has been appointed health commissioner to succeed Dr. Virgil D. Guittard, who goes to West Virginia.

Free Clinics.—The last of the Jefferson County health clinics was held recently at Audubon Park; at the nine clinics in the series there were 357 adults and 713 children, a total of 1,070 persons examined. No treatment was prescribed. When physical defects were found, the person was advised to consult his family physician.——Under the direction of the Bell County Health Department, a clinic was held at the Red Bird settlement school, at which among other examinations, seventy persons were examined for trachoma and the eyes of forty-five persons were treated.——The crippled children's free clinic for Mercer, Boyle, Anderson, Woodford, Franklin and Jessamine counties, held at Danville, ended May 27; ninety-one children were examined. A number of them were found to be curable, and arrangements were made to send them to Lexington and Louisville hospitals for treatment.——Plans have been made for holding three clinics for crippled children in southeastern Kentucky the latter part of June.

LOUISIANA

Dr. Garrey Goes to Vanderbilt University.—Dr. Walter E. Garrey, for nine years professor of physiology at Tulane University Medical School, New Orleans, was guest of honor at an entertainment given by Dr. Isaac I. Lemann, May 29. Dr. Garrey takes up the chair of physiology at Vanderbilt University, Nashville, Tenn., in the fall.

Plague Eradication.—Among 75,573 rodents examined for plague at New Orleans between December 5 and April 11, twelve were found to be plague infected, the date of discovery of the last infected rat being Jan. 17, 1925. During the week ending April 11, plague eradication comprised the inspection of 403 vessels, the fumigation with cyanid gas of thirty-six vessels, the examination of 5,062 rodents, and a total of 1,066 inspections.

MARYLAND

Institute of Biology to Be Established at Johns Hopkins.—An institute for research on general problems of biology, with especial attention to "population problems and the duration of life and its control," is to be established at Johns Hopkins University and will be known as the Institute for Biological Research. It will be under the direction of Raymond Pearl, Ph.D., research professor of biometry and vital statistics in the School of Hygiene and Public Health, and professor of biology at the Johns Hopkins Medical School. The institute will be financed by an annual grant from the Rockefeller Foundation, sufficient to carry on its activities, and the university will put at its disposal the fourth floor of the new Hunterian Building. Dr. Pearl will retain his connections with the other branches of the university on assuming the directorship of the institute.

Wilmer Institute Opens in October.—Dr. William H. Wilmer, Washington, recently appointed professor of ophthalmology, Johns Hopkins University, Baltimore, sailed for Europe, June 2, to survey research methods preparatory to the opening of the Wilmer Institute, October 1. Dr. Wilmer

will visit Paris, Vienna, Berlin, Breslau, Freiburg, Leipzig, London, Glasgow and Edinburgh to study late laboratory methods in ophthalmology, bacteriology, biochemistry and other sciences that bear on eye diseases. The first unit of the institute will have ten beds for private patients and twenty-six beds for ward patients. Plans for the remainder of the institute will not be drawn until Dr. Wilmer's return. Of the $3,000,000 available, $1,000,000 will be spent for the building and equipment. The remainder will be endowment for the free care of patients and for the support of research and teaching.

MICHIGAN

Society News.—Dr. Daniel N. Eisendrath, Chicago, will address the alumni association of the Detroit College of Medicine and Surgery at St. Mary's Hospital, Detroit, June 19, on "Advances in Urinary Surgery."

Personal.—Dr. and Mrs. James D. Bruce were guests of honor at a dinner dance given by the Saginaw County Medical Society, May 15. Dr. Bruce was recently appointed professor of internal medicine at the University of Michigan Medical School.——Dr. Ambrose G. Cowles has been appointed health officer of Durand.

Detroit's Milk Supply.—At present, 98.36 per cent. of the milk consumed in Detroit is pasteurized. More than 80 per cent. of the milk used is brought to the city in thermo glass-lined tank trucks. The average daily consumption in the city is 0.8 per cent. of a pint per person, and the total consumption 959,644 pints. Inspections are made at the farm, the loading station, the city milk plant and on delivery wagons. About 10,000 farms furnish milk to Detroit.

MINNESOTA

University Offers Hospital Site.—The University of Minnesota has offered the city of Minneapolis a site for the construction of a new municipal general hospital. No time limit is specified in which the city shall erect a hospital.

Society News.—Dr. Frederick R. Huxley, Faribault, was elected president of the Southern Minnesota Medical Association, May 18; Drs. John S. Holbrook, Mankato, and Archibald H. Logan, Rochester, vice presidents, and Dr. Henry T. McGuigan, Red Wing, secretary-treasurer.——The Minnesota Neurological Society holds its last meeting at Rochester, June 13, devoting the morning to surgery and clinical presentations and the afternoon to discussions by members of the Mayo Clinic.——Drs. Guilford Allen Robinson, New York Postgraduate Hospital, and Herbert M. Evans, professor of anatomy, University of California Medical School, lectured recently at the Mayo Clinic, Rochester, on "Radium in Dermatology" and "The Relation of Nutrition to Reproduction," respectively.

Contract for Medical Defense.—Following the study of medical defense by a committee, the chairman of which was Dr. Edward S. Judd, Rochester, the council of the Minnesota State Medical Association was authorized to contract with an insurance company for medical defense insurance on a group basis at the option of each member. The house of delegates voted to defend members who may be sued for malpractice for services rendered in the two years previous to June 27, 1925, on which date the new two year statute of limitations goes into effect.——The outstanding feature of the recent annual meeting of the house of delegates was the report of the committee on legislation. For the first time in history, says *Minnesota Medicine*, legislation proposed by the state association was successfully engineered through the state legislature.

MISSOURI

St. Louis Society Building Started.—In the presence of about 200 members of the St. Louis Medical Society, the president, Dr. Fred W. Bailey, May 19, turned the first sod in the construction of the new home for the society, to be erected on Lindell Boulevard. This building will be completed within a year; later an auditorium to seat about 2,000 people will be constructed. Of the original goal of $300,000, $200,000 has been subscribed.

Annual Dues Raised.—At the sixty-eighth annual meeting of the Missouri State Medical Association, May 5-7, a motion was adopted to raise the annual dues from $5 to $8, beginning January, 1926. An amendment to the constitution was adopted which permits the president or secretary of a county society to act as a delegate if the society is not otherwise represented. The House of Delegates adopted a resolution addressed to President Coolidge and the Secretary of the Treasury, asking to be relieved from the war tax under the Harrison Narcotic Law, and for the deduction of funds spent on postgraduate work, and in the attendance of medical society meetings, from the income tax.

NEBRASKA

Annual Dues Raised.—The Nebraska State Medical Association at its recent annual meeting, Lincoln, voted to raise the annual dues from $5 to $8.

Survey Based on A. M. A. Directories.—The president of the Nebraska State Medical Association made a survey based on the American Medical Association directories of 1906 and 1925 of the relative increase of physicians to Nebraska's total population. The state medical journal says that in this period there was an increase of 18 per cent. in the population of the state and an increase of only 12.9 per cent. in the total number of physicians. In cities of 2,500 and more, the population increased 46 per cent. and the number of physicians 86 per cent. In towns of from 1,000 to 2,500, there was an increase of 56 per cent. in the population and of only 19 per cent. in the number of physicians. In the towns of 1,000 and under, the increase in the population was 17 per cent., and the increase in the number of physicians was 17 per cent. also.

NEW YORK

Insect Zoo for Research.—The entomology department of the American Museum of Natural History is preparing an insect zoo on a forty-acre tract at Interstate Park near Tuxedo. The zoo will be used for research work and will open July 1.

Report of Laura Spelman Rockefeller Foundation.—The annual report of this foundation, published, May 31, shows that appropriations of $6,580,987 were made during 1924 for child welfare, outdoor recreational work, restocking university libraries in Germany, and research work. The foundation assisted in four types of activity in child study: research, the preparation of teaching materials, the training of leaders for child study work, and demonstrations in the practical organization of parent and teacher groups for the study of child life and child welfare. In the field of social science, a total of $2,154,580 was appropriated. The following grants were made: to the University of Chicago, $241,500; to the University of North Carolina, $97,500; to Harvard University and Radcliffe College for research on international subjects, $250,000; to the Robert Brookings Graduate School of Economics and Government, $490,000; to Yale University for research in psychology and related fields, $207,500; to the London School of Economics and Political Science, $115,000.

New York City

Dr. Rushmore Receives Gold-Headed Cane.—Dr. John D. Rushmore, for many years professor of surgery and now professor emeritus at the Long Island Medical College Hospital, was guest of honor at a luncheon and reception at the Hamilton Club, Brooklyn, May 28, which marked the completion of his fiftieth year in the practice of medicine. Dr. John O. Polak, professor of obstetrics and gynecology at the college, presided; Dr. Frederick Tilney, professor of neurology, presented Dr. Rushmore with a gold-headed cane.

Hospital News.—Ground was broken, May 18, for the new Long Beach Hospital. Senator Reynolds donated the site, and $200,000 was raised by public subscriptions.——The cornerstone of the new building of the New York City Cancer Institute of the department of public welfare, at Welfare Island, was laid, May 21. The commissioner of public welfare and Dr. Isaac Levin gave addresses.——An ear, nose and throat service has just been inaugurated at the Central Neurological Hospital on Welfare Island, and Dr. Joseph Coleman has been appointed the first attending otolaryngologist.——A cardiac clinic for children has been opened by the Congregation of Temple Israel at its community center on Ninety-First Street. Dr. Leo Brooks Rosenthal will be in charge.——Members of the Italian Medical Society of Brooklyn have pledged $100,000 toward the erection of the proposed Italian Hospital. Another $100,000 is being raised among laymen.——The memorial of the Presbyterian Hospital units in the World War will take the form of a twelve bed ward and solarium, to be erected at a cost of $80,000.——The nurses' quarters at Fordham Hospital will be enlarged at a cost of $500,000 to accommodate 122 nurses.——The erection of a new maternity hospital for the Methodist Hos-

pital has enabled remodeling of the old maternity building, at a cost of $100,000, to house the medical unit of fifty-five beds, just completed.

OHIO

Hospital News.—The famous "front porch" home of the late President McKinley, Canton, is soon to be moved to a new location to make way for a new unit to the Canton Mercy Hospital.——A compaign has been launched to raise $1,350,000 for a dispensary, laboratory and nurses' home at Mount Sinai Hospital, Cleveland.

"Health-by-Mail" Clinics.—The house of delegates of the Ohio State Medical Association at Columbus unanimously condemned the so-called "health-by-mail" practice as being untrustworthy and inadequate to administer to the health needs of the people. The resolution considered that most of these "clinics" rely largely on a "quarterly urine test" made at a distant point, from which erroneous deductions and dangerous diagnoses are possible.

Conference with State Bar Association.—The Ohio Bar Association having considered proposals to change the present method of expert testimony, the house of delegates of the Ohio State Medical Association unanimously adopted a resolution instructing the committee on public policy to request a conference with the Ohio Bar Association for the purpose of agreeing and uniting on a practical plan for expert medical testimony in court cases.

Chiropractors Petition for Referendum.—Chiropractors filed a petition, May 29, with the secretary of state bearing more than 90,000 signatures, for a popular vote on the question of a state board of chiropractic examiners and of revising the requirements for license to practice chiropractic in Ohio. The petition practically assures that this matter, which has been repeatedly rejected by the state legislature, will be voted on by the people in November.

NORTH CAROLINA

Dr. Rankin's Resignation Accepted.—At a special meeting of the state board of health, May 30, the resignation of Dr. Watson S. Rankin, secretary of the board, was accepted. The president, Dr. Joseph Howell Way, presented Dr. Rankin with a gold watch as a token of regard and appreciation of his services. Dr. George M. Cooper, assistant secretary, was designated to perform the duties of the secretary, pending an election by the board. Dr. Rankin assumed his full-time duties with the Duke Foundation, June 1. The state board of health adopted a resolution tendering the use of its laboratories, library and office facilities to assist the foundation.

PENNSYLVANIA

Dengue Epidemic at Chester.—Dengue fever has recently appeared in epidemic form at Chester. Physicians up to June 5 had reported more than 350 cases. Dr. John Moore Campbell, director, communicable disease division, state department of health, visited Chester and confirmed the diagnosis, it is reported.

"Baby Farms" Must Be Licensed.—An act recently signed by the governor requires that infant boarding houses in Pennsylvania must be licensed by the state department of public welfare. These licenses must be approved, first, by the local health authorities and in villages by some person designated by the welfare department. The new law provides also that the children in such boarding homes must be registered.

Postgraduate Instruction in Heart Disease.—The School of Medicine of the University of Pittsburgh made available without charge to reputable physicians of western Pennsylvania six lectures and demonstrations on cardiovascular disease, which were held, June 2-11, at the St. Francis and Mercy hospitals. Among the subjects were: "The Diagnosis and Treatment of the Cardiac Arrhythmias"; "Demonstration of the Electrocardiogram"; "Arteriosclerosis"; "Valvular Heart Disease"; "Myocarditis"; "Cardiac Decompensation," and "The Significance of Blood Pressure Readings."

Report on Public Health in Pittsburgh.—The meeting of the Allegheny County Medical Society in cooperation with the Pittsburgh Department of Health, June 16, at Carnegie Music Hall, will report the status of public health in Pittsburgh in 1924 to the medical profession and the public. There will be a public health symposium of ten papers of ten minutes each, mostly by officials of the department of public health. The *Pittsburgh Medical Bulletin* says this is a new departure in which the reaction will be noted carefully. An open public health scientific meeting of the Allegheny County Medical Society may be given annually to make a yearly report to the people on the status of the public health.

Jefferson Alumni Banquet.—At the celebration of the centennial of Jefferson Medical College, 1,750 graduates from all parts of this country and from many foreign countries assembled at a banquet, May 29, at the Benjamin Franklin Hotel. Jefferson has graduated more than 14,000 physicians, of whom about 6,000 are still living, and of these almost 30 per cent. were in attendance. Dr. Ross V. Patterson, dean for the last twenty years, who presided, announced that the attendance was the largest of any reunion of its kind. Among the speakers were William Potter, president of the college; Surg. Gen. Merritte W. Ireland, U. S. Army; Dr. Norman J. Blackwood, senior medical officer, U. S. Navy; Dr. Wilmer Krusen, director of public health, Philadelphia, and Dr. Chevalier Jackson.

Philadelphia

University News.—Dr. Joseph B. De Lee, Chicago, addressed the students of the University of Pennsylvania School of Medicine, May 21, on "The Part Played by the Obstetric Department of the University of Pennsylvania in Building up Modern Obstetrics in America," and demonstrated cervical cesarean section before the upper classmen and postgraduate students at the University of Pennsylvania Hospital.

First Award of Medal.—The Joseph Leidy Memorial Medal was awarded, May 12, to Herbert Spencer Jennings, Ph.D., Johns Hopkins University, Baltimore, at a special meeting of the Academy of Natural Sciences, Philadelphia. The award was "in appreciation of researches on the protozoa and the rotatoria, and in recognition of [Dr. Jennings'] broad knowledge and keen understanding of the significance of biologic phenomena." The Joseph Leidy Memorial Fund, created in 1923 as a trust with the academy, provides for the award every three years of a bronze medal accompanied by an honorarium "as a reward for the best publication, exploration, discovery or research in the natural sciences in such particular branches thereof as may be designated."

TENNESSEE

Society News.—Dr. William S. Anderson, Memphis, has been elected president of the Tennessee State Association of Railroad Surgeons; Dr. Duncan Eve, Jr., Nashville, vice president, and Dr. Eugene C. Lindsey, Tracy City, secretary (reelected). Dr. James C. Kelton, Lascassas, was elected president of the Middle Tennessee Medical Society, May 14, at the sixty-first semiannual meeting.——At the recent meeting of the West Tennessee Medical and Surgical Association, Dr. Eugene M. Holder, Memphis, was elected president; Dr. John W. Oursler, Humboldt, vice president; and Dr. Isaac A. McSwain, Paris, for the thirty-fifth time was named secretary. The next meeting will be at Jackson.

GENERAL

Literature on Influenza.—The U. S. Public Health Service has published a Review of the Literature on Influenza and the Common Cold as a supplement (No. 48) to *Public Health Reports*. It has been prepared by Surg. James G. Townsend.

Delegates to British Medical Association.—The delegates from the American Medical Association to the annual convention of the British Medical Association at Bath, in July, are: Dr. William D. Haggard, Nashville, President of the American Medical Association; Dr. George E. de Schweinitz, Philadelphia, a former President of the American Medical Association, and Dr. Howard Fox, New York.

Automobile Fatalities.—The Department of Commerce has received reports of automobile fatalities for 1925 from seventy cities of 100,000 population or more. The only city in this group which shows no fatalities in 1925 up to May 23 is New Bedford. In the same period New York City reported 334 fatalities, Chicago 198, Philadelphia ninety-five, and Detroit and Cleveland each eighty-six. In fifty-eight cities for which comparisons are possible for the early months of 1923 and 1925, thirty show more fatalities from January 1 to May 23 than were reported before June 1 in 1923.

Post Graduate Assembly in London.—At the meeting of the Interstate Post Graduate Assembly of American physicians in London, England, Dr. Charles H. Mayo, Rochester, Minn., conferred honorary membership in the assembly on

Lord Dawson, Sir Humphry O. Rolleston, Sir John Bland-Sutton, Sir St. Clair Thomson, Sir James Berry and Philip Franklin, F.R.C.S., head of the American Hospital in London and honorary organizer of the conference. The Duke of York opened the first session. The American physicians visited the London hospitals and were entertained by H. Gordon Selfridge, formerly of Chicago, and the American ambassador.

Committee Appointed to Investigate Ethyl Gasoline.—Conforming to a resolution adopted at the conference called by the Public Health Service in Washington, D. C., May 20, Surgeon General Cumming, U. S. Public Health Service, has appointed a committee of seven to investigate the health hazard involved in the sale and general use of tetra-ethyl lead gasoline as motor fluid. The committee consists of the following representatives:

1. Clinical Medicine: Dr. David L. Edsall, dean, Harvard Medical School and School of Public Health and chief of the Medical Clinic, Massachusetts General Hospital.

2. Physiology: Dr. William H. Howell, professor of physiology, Johns Hopkins Medical School, and assistant director, Johns Hopkins School of Hygiene and Public Health.

3. Industrial Hygiene: Dr. Albert J. Chesley, executive health officer, state of Minnesota; Dr. Reid Hunt, professor of pharmacology, Harvard Medical School; Dr. W. S. Leathers, professor of preventive medicine, Vanderbilt University; Dr. Edward Julius Stieglitz, professor of chemistry, University of Chicago; Charles E. A. Winslow, D.P.H., professor of public health, Yale Medical School.

The committee is expected to present its conclusions to the U. S. Public Health Service not later than Jan. 1, 1926.

Guggenheim Foundation Awards Fellowships.—The John Simon Guggenheim Memorial Foundation (THE JOURNAL, March 7, p. 760), announced, May 21, the award of fifteen fellowships for research study abroad. An allowance of about $2,500 a year goes with each award. Among the recipients are: Dr. Percival Bailey, Peter Bent Brigham Hospital, Boston, for research in diseases of the nervous system, at the clinic of M. le Professor Claude and the Dejerine Laboratory, Paris; Prof. Gordon F. Ferris, Stanford University, San Francisco, to accumulate material for the study of insect fauna in Mexico and Central America; Isaac Fisher of Fisk University, Nashville, Tenn., for a study in America and abroad of the danger trends in world race relations; Prof. Coleman R. Griffith, Ph.D., of the University of Illinois, for research in child psychology, principally at the University of Giessen, Hesse, Germany; Gerhard Krohn Rollefson, Ph.D., University of California, for work on the application of methods of physics to the study of chemical phenomena, in Germany, and Dr. Edwin W. Schultz, Stanford University, San Francisco, for a study of bacteriophagy at the International Sanitary Council at Alexandria, Egypt.

International Congress of Radiology.—The majority of American delegates to the International Congress of Radiology, London, July 1-4, will sail, June 20, the arrangements for American participation in the congress having been made by a committee comprising Drs. Leopold Jaches, New York; Arthur C. Christie, Washington, D. C.; Charles Eastmond, Brooklyn; Frederick M. Law, New York; William H. Stewart, New York, and Harry M. Imboden, New York. The sections of radiology and physics will meet in joint session the opening day for a discussion of the standardization of dosage, which will be opened by Professor Bragg from the physics standpoint and by Dr. Béclère from the medical standpoint. The Silvanus Thompson Memorial Lecture will be delivered by Duc de Broglie of Paris. A congress dinner will be held the second evening, and on the third evening Sir Berkeley Moynihan will give the MacKenzie Davidson memorial lecture on "The Relationship of Radiology and Surgery." Twenty-seven roentgenologists from the United States and Canada are on the program. After the congress, a number of the delegates will visit other centers in England and Scotland, and will take a two weeks' trip through Scandinavia, Prof. Gösta Forssell having arranged the itinerary in the last country.

Society News.—At the annual meeting of the Medical Women's National Association, Atlantic City, May 25-26, Dr. Anna E. Blount, Oak Park, Ill., was installed as president; Dr. Francis E. Rose, Spokane, Wash., was elected president-elect; Drs. Harriet F. Coffin, New York, Olga F. Stastny, Omaha, and May A. Hopkins, Dallas, Texas, vice presidents, and Dr. Lena K. Sadler, 533 Diversey Parkway, Chicago, secretary. The treasurer is Dr. Ethel D. Brown, New York. ——The next annual meeting of the American College of Radiology and Physiotherapy will be at the Hotel Sherman, Chicago, November 30 to December 3.——At the recent meeting of the Medical Library Association in Atlantic City, Dr. F. M. Tice, Chicago, was elected president, Dr. John Ruhräh, Baltimore, vice president, Dr. Alexius McGlannan, Baltimore, treasurer, and Harriet Wilson, 535 N. Dearborn Street, Chicago, secretary.——Dr. Fred H. Albee, 40 East Forty-First Street, New York, is chairman of the American Committee of the International Medical Congress of Industrial Accidents and Diseases and will furnish programs on request for the Fourth Congress, which meets in Amsterdam, September 7.——The Inter-State Post-Graduate Assembly of America, directed by the Tri-State District Medical Association, will be at St. Paul, October 12-16. A large number of prominent speakers have accepted places on the program. ——At the annual meeting of the American Society of Clinical Pathologists, Philadelphia, May 20-23, Dr. Frederick E. Sondern, New York, was elected president; Dr. William G. Exton, Newark, N. J., president-elect; Dr. Francis L. Burnett, Boston, vice president, and Dr. Ward T. Burdick, Denver, secretary-treasurer.

Conference of State Health Officers.—The twenty-third Annual Conference of State and Territorial Health Officers with the U. S. Public Health Service, held at Washington, D. C., June 1-2, was attended by representatives from thirty-three states and the territory of Hawaii. An outstanding feature of the conference was the plan proposed by Leslie C. Frank, U. S. Public Health Service, for the unification of milk control in the United States. He said that the milk sanitation investigations of the Public Health Service have established the following facts:

1. The prevalence of milk-borne disease is far greater than has hitherto been shown. The Office of Milk Investigations of the service has received reports of forty-two outbreaks of milk-borne disease during 1924, and an estimate based on the distribution of these outbreaks compared with the distribution of their cases indicates that had all epidemics been reported the number would have run well over 100.

2. The vast majority of communities in the United States are not at present even approximately making use of the most effective means of reducing the prevalence of milk-borne disease.

3. There are almost as many variations of milk control practice in the United States as there are health officers to formulate them.

4. The dairy industry in general fails for this reason to have the respect for the knowledge of the health officer in matters of milk sanitation which would be desirable.

5. The consuming public, represented, for example, by the pediatricians, fails to have full confidence in the quality of milk as supervised by the health officers, and hence sets up special commissions for the the purpose of developing a "certified milk," inferentially condemning the general milk supply.

6. The consumption of milk in the United States, partly as a result of this lack of confidence in the quality of the general supply, is less than is desirable either from the standpoint of the public health or from the standpoint of the welfare of the dairy industry.

Following a general discussion, the conference unanimously adopted a resolution which proposes a voluntary unification of milk control in the United States. This proposal is set out in the following plan:

1. That the conference create a committee on milk control.

2. That the conference request the U. S. Department of Agriculture to detail one of the officers of its Dairy Division as a consultant to the committee and as an official representative of the Department of Agriculture.

3. That the conference request the U. S. Public Health Service to detail one of its officers as a consultant to the committee and as an official representative of the service.

4. That the conference instruct the committee to make a careful study of the milk ordinance which has now been adopted as standard by eight states and to submit a report to the 1926 conference as to whether this ordinance or any modification thereof is suitable for general adoption as standard by the state health officers of the United States.

5. That in the interval between the completion of the committee report and its presentation at the 1926 conference the various state health officers be given an opportunity of studying the report.

6. That, at the 1926 conference of state and territorial health officers, any state be invited to propose any desired modification of the standard recommended by the Committee on Milk Control, said modification to be debated and voted on.

7. That at the conclusion of the consideration of any proposed modifications the adoption of the proposed ordinance as standard by the Conference of State and Territorial Health Officers be voted on.

8. That the state health officers of the United States agree to adopt the standard ordinance thus nationally selected as standard for their respective states, and to recommend to all of their cities the enactment and enforcement of the standard ordinance.

Other subjects discussed at the conference were: A plan for the establishment of a morbidity area by Dr. Bolivar J. Lloyd, U. S. Public Health Service; Cooperative Measures for the Sanitation of Shellfish Areas. Dr. Warren F. Draper

of the Public Health Service reviewed the incidents leading to the present work of shellfish sanitation, and a report was made by Dr. Wade H. Frost showing the accomplishments thus far attained by the committee appointed by the Surgeon General to carry out the resolutions of the Shellfish Conference of February 19. Immigration and health inspectors are to be added to the staffs of consulates in several seaport cities of Europe, according to plans being worked out by the state department. It is proposed that the medical examinations of immigrants coming to the United States shall be made at the port of debarkation instead of at Ellis Island. Consent of various foreign governments will be required in order that it can be made compulsory for immigrants to submit to medical examinations abroad by American public health officers. The Irish Free State is the first to agree to the proposal, and the system in to be given a trial in that country. If the scheme should be found agreeable to the British government, similar medical examinations of immigrants by U. S. public health officials will no doubt be arranged for in England, Scotland and northern Ireland. Plans for carrying out this new policy are being made by the visé section of the state department. Assistant Secretary of Labor White and Assistant Surgeon General Kerr are now on their way to Ireland for the purpose of consummating such plans.

FOREIGN

Chinese Graduates in Practice.—A recent census of the graduates of the former Union Medical College, Peking, China, shows that 27 per cent. of the graduates are in private practice, 23 per cent. in government posts, and 39 per cent. in missionary work.

German Journal of Sex Ethics.—The German Aerzte- und Volksbund für Sexualethik has issued the first number of *Sexualethik*. Prof. E. Abderhalden explains the purposes of the new journal, and Niedermeyer's leading article tells of sexual consultation stations and measures for birth control.

International Child Welfare Congress.—The *British Medical Journal* states that the First International Child Welfare Congress is to convene at Geneva, August 24-28, under official patronage. It is anticipated that about 1,000 delegates will attend, representing fifty different countries. Prof. C. Pirquet, Vienna, is president of the section on hygiene and medicine.

Personal.—The city of Berlin has been ordered by court decree to pay 600 marks monthly for sanatorium treatment for Dr. Arndt who, until he came down with tuberculosis recently, was assistant resident physician at the Friedrichshain Municipal Hospital. This reverses the decision of the lower court.——Dr. A. Depage, professor of surgery, Brussels, has been reelected senator.——Dr. Salvador Pasqual, Madrid, opens the discussion on "Experimental Kidney Disease" and Dr. A. Ravara, Lisbon, on "Surgical Treatment of Urethral Fistulas," at the joint Spanish-Portuguese Congress on Urology at Lisbon in July.——Dr. Pedro Dias, aged 90, is to preside at the banquet which closes the centennial celebration of the founding of the medical school at Oporto, Portugal. A souvenir volume and medal and a special stamp commemorate the occasion.

Government Services

Reserve Officers' Training Camps

The Surgeon General has requested authority to hold training camps for medical reserve officers at Fort Snelling, Minn., June 16-30 and July 5-19; Camp Lewis, Wash., June 16-30 and July 5-19; Fitzsimons General Hospital, Denver, July 5-19, and Carlisle Barracks, Carlisle, Pa., June 16-30 and July 5-19. It is proposed to make the training practical and give opportunity to exercise command and execute plans simulating actual war conditions. The basic course in field training has been arranged for officers who have not previously received such training, and the advanced course for those who have completed the basic course, or for officers whose actual war service is equivalent to the basic course. Corps area commanders also have planned for training groups of medical reserve officers at the corps area camps for those officers over whom they have assignment jurisdiction. Officers when ordered to duty will receive mileage from their homes to camps and return and the pay and allowances of their grade while on active duty

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 29, 1925.

Conference on Trypanosomiasis

Mr. Ormsby-Gore, undersecretary of state for the colonies, presided at the opening session of the League of Nations conference on Trypanosomiasis. The main object is to consider the possibility of dispatching a special international commission of epidemiologic study into equatorial Africa, and to arrange for the active cooperation of the local sanitary authorities. Representatives were present from Belgium, France, Italy, Portugal and Spain. The British delegates were Dr. Andrew Balfour, director of the London School of Hygiene and Tropical Medicine, and Dr. A. G. Begshawe, director of the London Bureau of Tropical Diseases. Mr. Ormsby-Gore, in welcoming the delegates, said that the attention in England was prominently directed to this subject by the great outbreak of trypanosomiasis in Uganda about twenty years ago, when the disease killed more than 300,000 natives. Though less virulent today, the disease was still existent in that country as it was in East Africa. It was also known in the Anglo-Egyptian Sudan, and to a less extent in the British colonies in West Africa. To the British government it appeared that the time had come seriously to tackle the control and eventual extermination of the tsetse fly. The task seems tremendous, but he was not without hope. The remarkable achievements of Mr. Swynnerton in the Shinyonga district of Tanganyika Territory and of Father Cirvenga near Iringa, in the same territory, were significant and important. Referring to the international commission suggested as the result of his visit to East Africa, Mr. Ormsby-Gore said that its investigations should extend still further and include in its objects (1) a survey of the fly areas of tropical Africa, in particular, evidence regarding their extension or decrease and the causes of such movement; (2) further research into the bionomics of the tsetse fly; (3) experiments on a field scale with regard to the extermination of the fly, and (4) the prevention and treatment of both human and animal trypanosomiasis. He was glad to learn of the interest displayed by the Rockefeller Institute and other bodies in America in this problem. Their cooperation would be eagerly welcomed.

The Future of Man

Elliot Smith, the anatomist and anthropologist, declares in a press interview that there is no evidence of any essential modification of human structure, apart from such changes as result from the intermingling of races, within the last fifty centuries. The jaws had already assumed their modern form long before the artificialities of civilized diet were devised; the little toe had begun to atrophy many centuries before boots were invented. The study of fossil man shows a steady progress in the early stages of the history of the human family, but its accomplishment took a vast span of time. The progress effected during the last fifty centuries has been due, not so much to the improvement of structure or an enhancement of man's mental aptitude, as to the accumulation of knowledge and elimination of error. Undue stress has been laid on the use of the hand as the chief element in effecting man's intellectual progress. Only when higher powers of vision were acquired was the brain able to direct the hands in acquiring the skill and the ability of experimenting, out of which knowledge of the external world and the forces acting in it gradually emerged. We must, of course, assume that the human brain is still evolving; but the process is so

slow that no change is recognizable from the time of neolithic man in western Europe. The main element in human progress is, and will always be, the accumulation of knowledge. The most important racial changes that are taking place in mankind at present are due to the wholesale intermixture of peoples of different races and diverse traditions on a much greater scale than the world has ever known before. From such admixtures, new types will arise—the process can be seen in operation in the Hawaiian Islands and elsewhere—and certain native races will disappear. But, apart from the profound effects on physique that such intermingling will produce, the improvement in the health of mankind which a fuller understanding of hygiene has brought about is having a marked effect on man's physical and mental fitness.

The popular idea that the man of the future will be a big-brained monstrosity with a feeble body is not justified. We protect the small-brained part of the population and promote the cultivation of a physique that has never been surpassed in the history of mankind. The conditions of modern civilization mean the protection of and the failure to eliminate many individuals who under less artificial conditions could not possibly survive; and although this must act as a tremendous drag on progress, it must not be forgotten that not a few of the most distinguished persons who have exerted far-reaching effects in the history of civilization have been physical weaklings who, under natural conditions, would have gone to the wall. Hence it is difficult to generalize as to the means by which the human stock can be improved, in view of the fact that real geniuses often come from the most unlikely ancestry and under conditions which one might imagine would be absolutely fatal to any hope of intellectual development. However much the conditions of the industrial city worker may affect the individual, Elliot Smith does not think that the ill effects will influence physique in general. Mankind will improve in physique, he thinks. It will certainly be riper in experience, wiser and better equipped in every way to control its destiny than it is today, since man is already a being capable of modifying his behavior to suit alterations in his environment. The future of mankind is, he considers, a promising one.

Reversal of Verdict of Manslaughter Against a Physician

In THE JOURNAL, January 24, p. 298, a case was reported which was extraordinary in two respects: A physician was convicted of manslaughter in the course of his professional work, and the cause that gave rise to the charge was an almost incredible obstetric accident. He was called by a midwife to a labor in which he found an unusual and difficult presentation (what exactly it was is not clear from the evidence). He administered chloroform and attempted unsuccessfully to deliver with forceps. He then performed version, using considerable force, and delivered a dead child. In removing the placenta, he removed, by mistake, the greater part of the uterus. The patient was much exhausted and not expected to live. But she lingered for some days. Although requested by the husband to have her removed to the infirmary, he did not have this done for five days. When admitted, she was found unfit for operation and died seven days after delivery. The necropsy showed the bladder ruptured, the colon crushed against the sacral promontory, and a small rupture of the rectum. The conviction was received by physicians with disapproval, which was voiced in the correspondence columns of the *Lancet*. It was felt that due weight had not been given to the expert clinical evidence, which was entirely on the side of the accused. An appeal was made against the sentence of six months' imprisonment. In delivering judgment in the court of criminal appeal, the lord chief justice said that the charges of negligence made against the physician were (*a*) causing internal rupture in performing the operation of version; (*b*) removing the uterus with the placenta, and (*c*) delay in sending the patient to a hospital. For a conviction of manslaughter, it was necessary to prove failure of duty, that such failure caused death, and that the negligence amounted to a crime. The amount and degree of the negligence were the determining question. There must be *mens rea*. In explaining to juries the test they should apply to determine whether or not negligence amounted to a crime, judges had used many epithets, such as "culpable," "criminal," "gross," "wicked," "clear" and "complete." But whatever epithet was used and whether an epithet was used or not, to establish criminal liability, the facts must be such that the negligence went beyond a mere matter of compensation between subjects, and showed such a disregard for life and safety of others as to amount to a crime against the state and conduct deserving punishment. The court was of opinion that there had been no misdirection by the judge. But when invited to withdraw the first and second charges of negligence from the jury, he declined to do so, and the jury returned a general verdict of guilty. In the opinion of the court, there was no evidence to support the first charge (that based on the manner in which the physician performed the operation of version). A strong defense had been presented on the third charge, and it might well be that the judge relied largely on the first and second charges. If the first charge had been withdrawn, it was impossible to say that the jury would certainly have convicted. For that reason the conviction could not stand.

The *Lancet* from the first took the view that the conviction was due to neglect in a court of law to give value to clinical evidence, and its support was invaluable to the accused. It has also opened a fund to help to defray his expenses and headed it with a donation of $1,250.

PARIS

(From Our Regular Correspondent)

June 1, 1925.

The Prophylaxis of Trypanosomiasis in Cameroons

Letonturier, de Marqueissac and Jamot, in an article in the *Annales de l'institut Pasteur* on the prophylaxis of trypanosomiasis in Cameroons, Africa, point out that trypanosomiasis has been firmly implanted in Cameroons for many years in the region of Haut-Nyong and la Doumé. It assumes here an extremely contagious aspect—doubtless owing to the comparatively dense population—especially among the tribes living along the Nyong River. It shows little tendency toward spontaneous retrogression, tends to spread in all directions, and although it is less fatal than in certain other regions of equatorial Africa, it plays an important part in the general mortality. It kills about as many persons as all the other diseases combined, and it is mainly owing to this fact that the death rate is about twice as high as the birth rate. One will therefore readily understand the interest of European missions such as that which has been just recently concluded by the authors in their endeavors to check the spread of the infection and to treat the carriers of trypanosomes.

The mere search for hypertrophied glands is an untrustworthy means of recognizing infected persons. Many with trypanosomes do not present conspicuous glands, or at least not puncturable ones. Again, in these regions, not more than 30 per cent. of hypertrophied glands are the result of trypanosomiasis. If an examination of centrifugalized blood is not feasible, the only effective means of discrimination is a microscopic examination of the glandular serous fluid or an examination of the blood by the hanging drop method.

The authors examined with the aid of their flying squads 95,855 inhabitants; 64,744 persons were subjected to laboratory researches, and 19,871 were found infested with trypanosomes. It has been found that all patients in whom the nervous system is involved are incurable. Those who have parasites only in superficial areas are curable. When lumbar puncture is not feasible, one may regard as curable all patients who have no evident symptoms of nervous infection. Atoxyl is the most effective remedy. Strong doses, from 0.75 to 1 gm., repeated every ten or fifteen days, with a minimum of two injections, are indicated; the average coefficient of sterilization thus secured is 68 per cent.

Bayer 205 appears to be an extremely active product, but its action is inconstant. It is ineffective, as is likewise atoxyl, when administered to combat parasites in the cerebrospinal fluid and in persons with nerve manifestations of advanced types. It provokes renal lesions in almost every instance, and these are sometimes of a serious nature.

Tryparsamide seems to be effective only in advanced stages, when it will sometimes bring about a diminution of the leukocytes of the cerebrospinal fluid and an improvement in the general condition and in the nervous and mental symptoms.

Hereditary Transmission of Tuberculosis

The *Annales de médecine* contains an interesting article by Debré and Lelong on the hereditary transmission of tuberculosis. Leaving out of account the question of the transmissibility of a tuberculous diathesis, they consider only the hereditary transmission of an actual tuberculous infection, which they study from a new point of view; namely, that of intra-uterine infection with a few tubercle bacilli. In France, the researches by Grancher and de Hutinel, and the thesis by G. Küss, have led to the belief that the intra-uterine transmission of tuberculous infection is nonexistent or, at least, is exceptionally rare. The most recent researches have tended to confirm the conclusions of Küss. While they have added a few authentic cases, these researches have emphasized the extreme rarity of authentic congenital tuberculosis. In this matter, the statistics of veterinarians and the statistics of human pathology are in agreement. Naturally, the investigator must depend in his researches on lesions found in the postmortem examination of fetuses that have died in utero, on necropsies of stillborn infants or, finally, on necropsies of infants separated at birth from their tuberculous mother and sheltered from all possible contagion. In unquestionable congenital infection, Debré and Lelong point out that contamination is transplacental; that it leads to lesions which most commonly affect the liver and the lymphatic glands, but which may become generalized, or which may become localized in the lungs and in the tracheal and bronchial glands. In these cases the lesions of the glands and lungs that are observed are in no respects different from the lesions of tuberculosis acquired in early childhood. These lesions usually cause death in utero or stillbirth. If born alive, the infant (generally premature) dies at the end of a few weeks or a few months, and the clinical symptoms that it presents are then the same or only slightly different from those of acquired tuberculosis. The cutireaction to tuberculin may be positive or negative. To sum up—congenital tuberculosis does not differ anatomically, clinically or biologically from acquired tuberculosis of early childhood. The only main factor of differentiation is the etiologic element. The lesions are discovered at necropsy in case of stillbirth. They develop subsequently in case of survival, independent of any tuberculous contact, in a child separated from its mother at birth.

Of late we have been considering another form of intra-uterine tuberculous contamination, leading to a latent congenital tuberculosis. This contamination would take place, like the other, by the placental route. Owing to tuberculous bacillemia, the placenta would be contaminated. Recent foreign researches have pointed out discrete tuberculous lesions of the placenta. These lesions would not, however, be needed to explain the contamination of the fetus, for that might be a simple consequence of maternal bacillemia or the modifications in the structure of the placenta occurring during gestation, which lessen the significance of the barrier that exists between the maternal circulation and the circulation of the fetus and facilitate the irruption into the fetal circulation of leukocytes containing tubercle bacilli coming from the maternal organism. Furthermore, the existence of filtrable, nonacid-resisting types of tubercle bacilli, which seems at present to have been demonstrated, constitutes possibly a further argument in substantiation of the hypothesis of the frequent passage of bacilli through the placenta into the fetal organism.

Unfortunately for the defenders of the belief in intra-uterine contamination with few bacilli of tuberculosis, while there are presumptions in favor of such a view, no positive facts have been adduced. There has been no demonstration of a positive inoculation of the blood of the umbilical cord in infants born without apparent lesions and not becoming tuberculous until a long time afterward, when protected from all infective contact; nor has there been any demonstration of positive inoculations of the lymphatic glands of infants born of tuberculous mothers but separated from them at birth and dying later from nontuberculous diseases. Our usual methods of investigation (clinical study, necropsy, inoculations) leave the problem of the hereditary transmission of tuberculosis undecided and bring no proof for the theory of intra-uterine contamination, the existence of which remains therefore hypothetic. Only the prolonged observation over a period of years of children of tuberculous mothers, separated at birth from the mothers and carefully protected against all postnatal contact, will solve the problem.

ITALY

(From Our Regular Correspondent)

May 18, 1925.

The New Italian Institute for Cancer Research

In the presence of the king of Italy, ceremonies in celebration of the laying of the corner stone of the Istituto italiano per lo studio e la cura del cancro were recently held in Milan. The founding in Italy of an institution of a type similar to those already established in the United States, in England and in Germany is due to the initiative of the communal council of Milan, of which Senator Mangiagalli, professor in the University of Milan, is the president. The new institution is designed as a memorial of the twenty-fifth anniversary of the assumption of the royal crown by Victor Emmanuel III (1900-1925). A public subscription was opened to raise the necessary funds, and in a few months about 10,000,000 liras had been subscribed. The institute is to be erected in the vicinity of the new *Città degli studi*, or university center, in Milan, and it is thought that the new institute can begin to function in November, 1926.

Course of Lectures on Cancer

In accordance with an arrangement between the Italian league for combating cancer, of which the eminent senator and professor Alessandro Lustig is chairman, and the Accademia medico-fisica of Florence, a special course of lectures is being held on some of the more important problems connected with the crusade against cancer. Some of the lectures have already been given: experimental tumors, Professor Rondoni of the University of Milan; cancer of the stomach and its surgical treatment, Professor Bastianelli, surgeon to the hospitals of Rome; roentgenologic diagnosis of cancer, Professor Siciliano of the University

of Florence; roentgenologic treatment of cancer, Professor Palumbo of the University of Florence, and the crusade against cancer, Professor Fichera of the University of Pavia. Other lectures are to follow: The clinical diagnosis of gastric carcinoma, Professor Schupfer of the University of Florence; methods of combating cancer of the uterus, Professor Ferroni of the University of Florence, and the histologic diagnosis of cancer, Professor Vernoni of the University of Florence.

Dental Hygiene and Prophylaxis in the Schools

A joint circular, issued by the ministry of the interior and the ministry of public instruction, has recalled the attention of the prefects throughout Italy to the necessity of encouraging the medical services in the schools, strengthening them in the communities in which they already exist, and establishing them in regions still destitute of them. In this connection, the medical press of Italy is carrying on an interesting campaign to the end that, in addition to the general hygiene of the child, the condition of the mouth and teeth shall be looked after especially and that the young pupils shall be taught in a plain and simple way the more essential rules of dental hygiene. It has also been suggested that these rules be printed on the covers of school writing books and on blotters as well. It is planned to give a toothbrush to every child. The stomatologist who is entrusted with the supervision of the pupils should give special attention to the development and eruption of the teeth during the transition from the first dentition to the permanent set. The Federazione stomalogica italiana and the Federazione nazionale degli ordini dei medici especially have followed eagerly the discussions, which have awakened great general interest, as do all problems affecting the schools, which the *patria* expects to turn out a strong and healthy generation.

Third Session of the Italian Public Health Association

The Associazione italiana per l'igiene will hold its third national session in Sardinia, next month—partly in Cagliari and partly in Sassari, and, in addition to discussions, it will visit the principal public health institutions of the island, study the antimalaria campaign, and visit the Tirso mineral spring region. But the interest of those attending the session will lie particularly in the fact that on this occasion will be effected the so-called "mobilization of all national public health forces," for all the sections of the association will be called on to describe the hygienic conditions in their respective regions, stating what has been accomplished and what still remains to be done. Attendants at the congress will thus obtain a faithful, detailed picture of the present state of public health throughout the entire country.

NETHERLANDS

(From Our Regular Correspondent)

May 9, 1925.

The Crusade Against Malaria

The report published by the antimalaria commission contains some interesting points concerning the antimalaria crusade. The question had often been raised whether efforts directed toward the destruction of the anopheles mosquito in winter would be effective. The results seem to answer the question in the affirmative. In connection with the antimalaria campaign, the public press has brought up the question whether the sodium chlorid content of the water has an influence on the epidemiology of malaria. This is a very important point for the Netherlands, for, as is well known, interior bodies of water in Holland often become mixed with sea water, owing to back-flow through outlets to the sea. It is asserted in these newspaper articles that, if the waters of the interior could be protected against contamination by salty sea water, malaria would disappear entirely. These assertions, however, are far from being substantiated, and many facts may be adduced pointing away from such conclusions; but the matter is to be investigated, in view of its great importance.

A Conference of Physiologists

The Physiological Society of England has recently held in Leyden several joint meetings with the Physiologic and Pharmacologic Society of the Netherlands. At the close of the conference, a visit was paid to the laboratories of Prof. Zwaardemaker in Utrecht.

Serums and Vaccines

Minister Aalberse has presented a bill which, if passed, will modify the present law on the preparation of drugs. At present, only pharmacists are permitted to prepare medicaments, including biologic preparations. However, the granting of this exceptional permission is likely to throw open the door to many abuses, and it was with that idea in view that the present draft of a new law was drawn up, which provides for supervision in the preparation, conservation and dispensing of these products. A similar form of supervision will be established for like products imported from foreign countries. Criticisms passed by certain members of the medical profession are to the effect that practitioners who use serologic medicaments do so on the basis of their own knowledge. As a matter of principle, serology should be regarded as apart and distinct from the pharmaceutic profession and should not be controlled in the same manner. However, a decision of this nature should not be definitely adopted until the various organizations of medical specialists and the state serologic institutes have been afforded an opportunity to express their opinions.

The Dangers of Radiology

The dangers inherent in the use of roentgen rays and radium have recently occupied the columns of the daily press, and the demand has been expressed that more careful supervision of modern radiologic equipment be established to protect not only the roentgenologist but also persons in the vicinity. A special committee has been appointed in the Netherlands to study the question and to report directly to the minister of labor. Another disputable point was touched on: some advocated the exercise of a certain control over the exponents of roentgenology with a view to preventing persons who are not sufficiently expert from using such dangerous equipment as is constituted by modern roentgenologic apparatus, but it was found that such questions involved too closely the whole field of specialization in medicine and that many objections to any such action might be urged.

A New Anthropological Review

The national bureau of anthropology of the Netherlands has begun the publication of a trimonthly bulletin to be entitled *Mensch en Maatschappij*. It will deal with anthropology, ethnology, psychology, sociology, criminology, ethics and eugenics. It will be issued by the Noordhoff publishing house in Groningen.

The Pasteur Institute at Bandung

The activities of the vaccination laboratories and of the Pasteur Institute, which has been transferred to Bandung, Java, are noteworthy. During the year 1923 the vaccine prepared by the institute was used in large quantities, and it was found that of nearly 1,000,000 vaccinations performed between 96 and 97 per cent. were positive. Antirabic treatment was given in 500 cases. Of late, anticholera, typhoid, meningococcus and antiplague inoculations have been given in most of the territory of the Dutch East Indies.

BERLIN

(From Our Regular Correspondent)

May 16, 1925.

The Probable Adequacy of the World's Future Food Supply

The address by Professor Penck, which I reported in a previous letter, has induced Professor Rubner to publish an interesting article in the *Deutsche medizinische Wochenschrift* on the problem whether the world's future food supply is limited. The food consumption of a nation may be computed by taking the statistics of the number of persons engaged in various occupations and applying the known calory requirements for the several callings. Or, we can use household accounts as a basis of computation. However, no record is kept of the kitchen waste. Finally, we can consider the total production of foodstuffs, the total imports and exports, and the amount of foodstuffs used for animal feeding and industrial purposes, and make a certain allowance for losses occurring in the course of trade, and thus ascertain the consumption per person of proteins, fats, carbohydrates and calories. Estimates computed in the three ways indicated were found to agree very closely. We have thus an opportunity of computing the average food consumption per person in each country and throughout the world. The value of this estimate will not correspond to the consumption of an adult, since the average weight per person as derived from the weights of all the inhabitants would be only 45 kg., for one half of the population consists of growing children and one half of adults. The average consumption for an adult may be found with sufficient accuracy if the consumption per person is multiplied by 1.2. It has been possible to secure data which enable us to make comparisons between the relative food consumption of several peoples, which is of exceedingly great physiologic importance (Table 1).

TABLE 1.—*Classified Food Consumption of Various Peoples*

	Proteins Gm.	Fats Gm.	Carbohydrates Gm.	Total Calories
Japan	81	29	485	2,553
Italy	88	58	466	2,612
Russia	79	43	473	2,666
Germany	87	60	428	2,770
Austria	81	57	470	2,825
France	88	67	485	2,973
England	90	105	403	2,997
United States	89	(127)*	430	(3,308)*
Central America	85.3	58.6	456.0	2,764.3

* Not considered in computing the average values because manifestly too high.

The close agreement as to the metabolic and caloric values of the diets of the several civilized states is surprising. The only food substance showing any great differences is fat. The proteins and carbohydrates show a remarkable agreement and, as these substances are derived from plants, the existing agreement points to the domination of a vegetable diet among all peoples. Englishmen and Americans, who are usually regarded as large consumers of protein-containing foods, have, it seems, no rightful claims to that distinction.

To obtain a unit of comparison that is more familiar, for judging the protein consumption, we need only to change the values per person into the value applicable to an adult weighing 70 kg. We get then a protein consumption of 102.4 gm., or more than three times as much as would correspond to the so-called nitrogen minimum. The total calory consumption is determined, in practical life, chiefly by the movements of the body or by the amount of mechanical activity and labor. It will be noted that in the temperate zone there is no marked difference among the various peoples, from which fact we may assume that there are no nations that work to an immoderate degree and likewise none that lead an indolent life. For an adult of 70 kg., the average food consumption would be 3,317 calories daily, a value that corresponds to our observations on individual workmen.

In spite of the fact that the protein, carbohydrate and calory consumption is almost identical among the various peoples, an examination of Table 2 will show that they derive their food values from entirely different sources, which is a very striking observation and illustrates clearly the instinctive selection of a rational diet.

TABLE 2.—*The Percentage of Calories Derived from Stated Sources Among Various Nations*

	Italy	France	Germany	England
Cereals	63.7	55.24	40.76	37.70
Vegetables	5.53	4.27	4.77	1.54
Potatoes	1.90	6.72	12.02	6.90
Fruits	9.88	1.09	2.50	2.70
Vegetable oils	5.13	3.98	2.03	....
Sugar	2.19	3.43	5.94	14.23
Meat, game, fish	4.96	11.88	15.70	15.96
Milk	1.51	4.31	8.62	7.07
Cheese	1.25	1.91	1.07	1.34
Butter	0.42	1.09	4.08	5.42
Fats (lard)	2.67	....	1.60	7.37
Eggs	0.86	0.63	0.91	0.77

From Table 2 it becomes evident that there are fundamental differences in the diet of the four nations. One prefers a higher vegetable diet, and another a higher animal diet. But, among all four peoples, vegetables preponderate, quantitatively. In Italy, only 11.67 per cent. of all calories are derived from animal sources; in England, 38.03 per cent. Frenchmen eat twice as much meat as the Italians (based on statistics of years before the war), and the Englishman eats three times as much meat as the Italian. In the Japanese diet, 5 per cent. of the calories are of animal and 95 per cent. of vegetable origin. In protein consumption there is no particular difference among the nations. The difference lies in the relative percentage of protein that is of animal origin. From the standpoint of the physiology of nutrition, the main thing is the amount of protein consumed, but the sources from which the protein is derived affect most markedly the diet of a nation. However, it is probably true that the nations which ingest relatively more animal protein have the benefit of a large amount of protein that better meets the requirements of the human organism.

What we need for metabolism and a proper supply of energy we learn instinctively by the demands of the body cells. The way we satisfy this cell hunger depends on the relative availability of diverse kinds of foodstuffs, and becomes essentially a variable factor influenced to a great extent by habit. Yet, it is very evident that among those nations most inclined to urban life and characterized by mental agility and fondness for far-reaching enterprises, there is a strong tendency to animal food and a more concentrated and more palatable diet.

From these generalizations we may conclude that man has certain food requirements which must be satisfied but which, on the other hand, must not be exceeded.

The agricultural products of the soil depend, to be sure, on the climate, but, through the application of human energy, the area of cultivable land and the size of the crops can be greatly increased. Endless tracts of land are waiting to be drained before they can become fruitful, while still greater areas must be irrigated before they can produce a crop. Even in Asia, there are vast regions formerly under cultivation but which, through the decline of irrigation systems, have become deserts. The cultivation of the soil in eastern Europe, China and the neighboring states is still carried on in the most primitive and impracticable manner. The nitrogen of the air, which Nature gives back to us only in small quantities in the proper form to be utilizable for fertilization,

is destined to become in the immediate future an inexhaustible fertilizer with which to increase the productivity of the soil. Also more careful selection of seed grain; improved varieties of grain, and modifications in the general diet of many peoples are some of the ways in which considerable progress in the scientific nutrition of the masses may be looked for. The question of substituting certain chemically prepared foods for some articles of our diet may not be such an important aspect of the problem, though some progress along that line has been made.

Animal husbandry is of extreme importance for mankind, for already many nations have given up their almost exclusive vegetable diet and are using a higher percentage of animal food. It seems likely that the same process will occur in the future among Asiatic peoples, though, at present, there are religious scruples to be overcome.

Some investigators seem to feel an undue anxiety lest the development of animal husbandry result in a diminution of the food supply for human beings, since such development will of necessity entail the consumption by animals of foodstuffs that might be used to supply human needs. Such fears are, however, groundless. Aside from the fact that much of the feed and fodder given to animals is of a coarser variety and unsuitable for human consumption, the belief that in the process of converting foodstuffs into meat and fat a large quantity of energy is lost has no foundation in fact. Indeed, the method of converting such ingredients of a balanced ration as are difficult of digestion into forms that are more easily utilizable by the human organism by feeding them to animals has much to recommend it.

By the introduction of labor-saving machinery we may free a quota of labor that could be utilized in agricultural enterprises. This would contribute to the length of man's days on earth. Then, again, when the tropical regions are opened up to more extensive agricultural undertakings, the number of edible plants will be increased.

Attempts to replace by synthetic processes the mysterious photo-chemical laboratory that Nature has concealed in chlorophyllaceous plants have as yet met with no practical success; but we are not justified in saying, on that account, that chemistry will never make further progress in this direction.

While, in view of the many possible developments, we cannot foretell how soon an overpopulation of the earth in an absolute sense may be reached; especially since it is as yet impossible to foresee to what extent birth control, as practiced in many countries, will postpone the coming of that day, yet, it is very evident that the period of time that will elapse before mankind will enter on the final struggle for existence is by no means immeasurable.

Marriages

JAMES RAYMOND GORMAN, Lynchburg, Va., to Miss Mary Woodville Ferguson of Clifton Station, April 15.

HAROLD F. OWENS, Springfield, Mass., to Miss Gertrude E. O'Neil of Chicopee Falls, June 1.

HARRY BARTON HINCHMAN to Miss Regina Ladd Dickinson, both of Richmond, Va., April 22.

EDWARD STUART POMEROY to Miss Isabella Kearl, both of Salt Lake City, Utah, June 6.

JOHN F. RUNNELS, Chicago, to Miss Emma L. Armstrong of Fort Wayne, Ind., May 1.

KENNETH DAYTON ALLISON ALLEN to Miss Ruth Hoss, both of Denver, recently.

ROBERT M. GRAHAM to Miss Fanchon Elizabeth Bennett, both of Chicago, May 22.

Deaths

John Noland Mackenzie ● Baltimore; University of Virginia Department of Medicine, Charlottesville, 1876; Medical Department of the University of the City of New York, 1877; clinical professor of diseases of the throat and nose, University of Maryland School of Medicine, 1887-1897, and the Johns Hopkins University Medical Department, 1889-1912; past president of the American Laryngological Association; formerly on the staffs of the Hospital for Diseases of the Throat and Chest, Golden Square, London, the Johns Hopkins and the Baltimore Eye, Ear and Throat Charity hospitals; at one time editor of the *Maryland Medical Journal* and the *Journal of Laryngology and Rhinology*, aged 71; died, May 21, following a long illness.

George Ansel Sterling Ryerson, Niagara-on-the-Lake, Ont., Canada; Trinity Medical College, Toronto, 1875; L. R. C. P., Edinburgh, 1876; L. R. C. S., Edinburgh, 1877; emeritus professor of ophthalmology and otology, University of Toronto Faculty of Medicine; at one time consultant to the Toronto General Hospital; member of the Pan-American Medical Congress; aged 70; died, May 20, at the Wellesley Hospital.

William B. Trimble ● New York; Medical Department of the University of the City of New York, 1891; member of the American Dermatological Association and the New York Dermatological Society; professor of dermatology and syphilology, University and Bellevue Hospital Medical College; on the staff of the Bellevue Hospital; aged 55; died, May 22.

Lewis Greene Woodson, Birmingham, Ala.; University of Maryland School of Medicine, Baltimore, 1887; member of the Medical Association of the State of Alabama; formerly professor of diseases of the eye, ear, nose and throat, Birmingham Medical College; at one time on the staffs of the Hillman and St. Vincent's hospitals; aged 72; died, May 23.

George L. Warren, Newark, N. J.; Columbia University College of Physicians and Surgeons, New York, 1899; member of the Medical Society of the State of New Jersey; county physician; on the staff of St. Barnabas Hospital; aged 51; died suddenly, May 20, of heart disease.

Joseph Rankin Swartslander, Doylestown, Pa.; Jefferson Medical College of Philadelphia, 1897; member of the Medical Society of the State of Pennsylvania; served in the M. C., U. S. Army, during the World War; aged 49; died suddenly, May 9, of coronary thrombosis.

William H. Brooks ● Lieutenant-Colonel, U. S. Army, retired, Salt Lake City, Utah; Baltimore Medical College, 1889; entered the Army as assistant surgeon, 1901; retired from active service for physical disability, 1913; aged 56; died, May 21, at Fort Douglas.

William N. Theissen ● Faribault, Minn.; Minneapolis College of Physicians and Surgeons, 1901; for four years a member of the board of education; formerly president of the board of health and coroner of Sibley County; aged 48; died, May 15, of angina pectoris.

Roy Thomas Urquhart, Grand Rapids, Mich.; University of Illinois College of Medicine, Chicago, 1901; member of the Michigan State Medical Society; specialized in ophthalmology, otology, laryngology and rhinology; aged 47; died suddenly, May 18.

Henry Morton Pierson, Roselle, N. J.; Columbia University College of Physicians and Surgeons, New York, 1903; member of the Medical Society of New Jersey; aged 46; died, May 6, at the Elizabeth (N. J.) General Hospital, of cirrhosis of the liver.

Charles R. L. Halley, Sheridan, Wyo.; Bellevue Hospital Medical College, New York, 1888; Missouri Medical College, St. Louis, 1895; member of the Wyoming State Medical Society; aged 64; died, May 13, at Fort Collins, Colo., of myocarditis.

Thomas G. Allen ● Buffalo; State University of Iowa College of Medicine, Iowa City, 1886; on the staffs of the Emergency and Mercy hospitals; aged 66; was killed, May 6, when the automobile in which he was driving was struck by a train.

James Sterling McAllister, Sapulpa, Okla.; Barnes Medical College, St. Louis, 1896; served in the M. C., U. S. Army, in France, during the World War; aged 59; died, May 17, at the All Saints' Hospital, McAlester, of injuries received in a fall.

Charles Hayward Cushing ● Elyria, Ohio; Medical Department of Ohio University, Cleveland, 1895; past president of the Lorain County Medical Society; on the staff of the Elyria Memorial Hospital; aged 55; died, May 15, of typhoid fever.

Clarence A. Traphagen, Bay City, Mich.; University of Michigan Medical School, Ann Arbor, 1899; member of the Michigan Medical Society; president of the Bay County Medical Society; aged 53; died, May 9 of chronic nephritis.

Thomas Franklin Lockwood ● Butler, Mo.; Northwestern Medical College, St. Joseph, 1887; University of Tennessee College of Medicine, Memphis, 1895; aged 60; died, May 15, at a hospital in Fort Scott, Kan., of septicemia.

Oscar Le Soure, New Hartford, Conn.; University of Michigan Medical School, Ann Arbor, 1873; Bellevue Hospital Medical College, 1874; one of the founders of the Grace Hospital, Detroit; aged 74; died, May 13.

Henry Vincent Carroll, Newport, R. I.; Illinois Medical College, Chicago, 1902; member of the Rhode Island Medical Society; since 1909, a medical inspector of schools; aged 47; died, May 19, following a long illness.

George Mitchell Stump, Perryville, Md.; University of Pennsylvania School of Medicine, Philadelphia, 1873; member of the Medical and Chirurgical Faculty of Maryland; aged 75; died, May 10, of uremia.

Bertha F. Lubitz, New York; Woman's Medical College of the New York Infirmary for Women and Children, 1891; aged 61; died, May 15, at the Montefiore Hospital, of a tumor of the spinal cord and septicemia.

Henry Jefferson Kelso ● Knoxville, Tenn.; Vanderbilt University Medical Department, Nashville, 1892; formerly professor of anatomy, Tennessee Medical College; aged 54; died, May 14, of angina pectoris.

Christian Augustus Dannaker, Kansas City, Mo.; University of Pennsylvania School of Medicine, Philadelphia, 1872; aged 76; died, May 8, at Kansas City, Kan., of angina pectoris and arteriosclerosis.

George R. Stemple, Aurora, W. Va.; Kentucky School of Medicine, Louisville, 1901; member of the West Virginia State Medical Association; aged 50; died, May 13, at a hospital in Cumberland, Md.

Clarence Bentley Gould, Waterloo, N. Y.; Hahnemann Medical College and Hospital of Philadelphia, 1907; served in the M. C., U. S. Army, in France, during the World War; aged 49; died, May 11.

Norman Mortimer Avery, Berkeley, Calif.; Louisville (Ky.) Medical College, 1894; University of California Medical School, San Francisco, 1894; aged 70; died, May 11, of cerebral hemorrhage.

George Austin Bunch, Clarks Hill, S. C.; University of Georgia Medical Department, Augusta, 1878; member of the South Carolina Medical Association; aged 72; died, May 9, at Atlanta, Ga.

Frank Adelbert McDonald ● Concordia, Kan.; Bellevue Hospital Medical College, New York, 1887; past president of the Cloud County Medical Society; aged 64; died, May 8, of uremia.

Chancellor Hill Whiting, Medina, N. Y.; Syracuse University College of Medicine, 1875; member of the Medical Society of the State of New York; aged 83; died, May 9, of senility.

Charles P. Leitzell, Lena, Ill.; College of Physicians and Surgeons, Baltimore, 1882; member of the Illinois State Medical Society; aged 70; died suddenly, May 10, of heart disease.

Philemon R. Shelby, Princeton, Ky.; University of Louisville School of Medicine, 1883; aged 64; died, May 10, at the Jennie Stuart Memorial Hospital, Hopkinsville, of uremia.

John H. Veatch ● Marine, Ill.; Hering Medical College, Chicago, 1898; aged 55; died, May 9, at St. Joseph's Hospital, Highland, of uremia and hypertrophy of the prostate.

Alfred Scholl Vrooman ● Kingston, N. Y.; University of Vermont College of Medicine, Burlington, 1887; on the staff of the Kingston City Hospital; aged 62; died, March 19.

William W. W. Wilson ● Henderson, Ky.; Kentucky School of Medicine, Louisville, 1902; aged 46; died, May 13, at the Moseley Hospital, of cerebral hemorrhage.

Melvin P. Parrish ● Decatur, Ill.; Rush Medical College, Chicago, 1895; on the staff of the Wabash Employees' Hospital, where he died, May 28, of pneumonia, aged 56.

Jackson S. Chapin, Euclid, Minn. (licensed, Minnesota, 1884); for twenty years postmaster of Euclid; aged 69; died suddenly, May 11, of cerebral hemorrhage.

Ivan Whitfield Keith ● Beaumont, Calif.; Hahnemann Medical College of the Pacific, San Francisco, 1911; aged 36; died, March 28, of lobar pneumonia.

Howard Douglas Wilson, Barrington, Nova Scotia, Canada; University of Pennsylvania School of Medicine, Philadelphia, 1878; aged 72; died, March 5.

David R. Porter McDermott, Dallas, Texas; University of Texas Department of Medicine, Galveston, 1870; Confederate veteran; aged 83; died, May 5.

Robert Brittain Knight, Stockton, Calif.; Denver College of Medicine, 1892; formerly member of the city board of health; aged 58; died, May 11.

Squire B. Crume ● Bloomfield, Ky.; University of Louisville School of Medicine, 1893; aged 55; died, May 13, of carcinoma of the stomach.

Joshua G. Ellis ● Cerro Gordo, Ill.; American Medical College, 1880; aged 66; died, May 4, at St. Mary's Hospital, Decatur, of heart disease.

Henry DeKraft, Greenwich, Conn.; Eclectic Medical College of the City of New York, 1882; aged 86; died, May 4, following a long illness.

Thomas Porter Asbury, Omaha (licensed, Iowa, 1887); also a druggist; aged 86; died, April 15, of cerebral hemorrhage and influenza.

Henry Wimer, Atwood, Kan.; Eclectic Medical Institute, Cincinnati, 1894; aged 60; died, May 5, at Hastings, Neb., of cerebral hemorrhage.

George L. S. Schulze, Minneapolis; University of Bonn, Germany, 1889; aged 62; died, May 6, of carcinoma of the tongue and larynx.

George Alfred Elliott, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1896; aged 56; died, April 26, of pneumonia.

Newton Ford Raines, Raines, Tenn.; College of Physicians and Surgeons, Baltimore, 1879; aged 67; died, May 7, of chronic nephritis.

John Marvin Furr, Pontotoc, Miss.; Rush Medical College, Chicago, 1908; aged 44; died, May 5, of peritonitis, following appendicitis.

Anthony I. Derr, Columbus, Ohio; Starling Medical College, Columbus, 1889; formerly state senator; aged 75; died, May 11.

Thaddeus W. Williams, San Antonio, Texas; Medical College of Ohio, Cincinnati, 1862; aged 88; died, May 8, of senility.

Thomas W. Shearer, Houston, Texas; University of Illinois College of Medicine, Chicago, 1884; aged 68; died, May 7.

Ewald J. Schindler, Desloge, Mo.; Barnes Medical College, St. Louis, 1901; aged 61; died, May 4, of cerebral hemorrhage.

William F. McCray, New Burlington, Ohio; Bennett Medical College, Chicago, 1905; aged 70; died, May 7, of asthma.

Edwin E. Randall ● Chicago; Rush Medical College, Chicago, 1897; aged 58; died, May 28, of organic heart disease.

Jesse Thomas Meredith, Los Angeles; Kentucky School of Medicine, Louisville, 1879; aged 74; died suddenly, May 13.

John Welby Cline ● Los Angeles; University of Colorado School of Medicine, Denver, 1896; aged 54; died, May 14.

Anna Milice, Warsaw, Ind.; Curtis Physio-Medical Institute, Marion, 1887; aged 82; died, May 8, of influenza.

J. L. Eggen, Shelbyville, Ky.; Louisville Medical College, 1871; aged 80; died, May 3, of cerebral hemorrhage.

J. G. Carter, Scott, Ga.; University of Georgia Medical Department, Augusta, 1873; aged 78; died, May 8.

Daniel E. Kaufman, Monroeville, Ind.; Fort Wayne College of Medicine, 1891; aged 63; died, April 11.

W. R. Brewer, Ola, Ark.; Memphis Hospital Medical College, 1902; aged 47; died, May 4, of meningitis.

George Edward Gallon, Hancock, Mich.; Rush Medical College, Chicago, 1899; aged 51; died, May 18.

Andrew Grayden, Peoria, Ill.; Jefferson Medical College of Philadelphia, 1877; aged 71; died, May 20.

John W. Parmely, Rock, Ill.; American Medical College, St. Louis, 1878; aged 79; died, May 20.

John R. Hall ● Marshall, Mo.; Missouri Medical College, St. Louis, 1873; aged 75; died, May 10.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

GEROXIDE NOT ACCEPTED FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The report which appears below was sent to the Germanium Products Company of Trenton, N. J., in August, 1924, but publication was postponed at the request of the firm to await substantiating evidence. Such evidence has not been received. On the other hand, the advertising issued by the firm declares that "the rare earth metal germanium is now recognized as a most valuable therapeutic agent." In consideration of the lack of evidence for the therapeutic value of germanium dioxid, the Council authorized publication of this report.

W. A. PUCKNER, Secretary.

Under the proprietary name "Geroxide," the Germanium Products Company of Trenton, N. J., markets a solution of germanium dioxid. The solution is prepared by dissolving germanium dioxid in water and neutralizing the weakly acid solution of the germanic acid with sodium hydroxid until the solution has a hydrogen ion concentration of 7.4 and adding sufficient sodium chlorid to make the finished solution isotonic. The solution is supplied in ampules containing in 10 c.c., respectively, 0.025 gm. and 0.05 gm. germanium dioxid.

The Germanium Products Company claims that germanium dioxid acts as a powerful stimulant to the red bone marrow, resulting in a marked and sustained increase in the number of erythrocytes and the hemoglobin content, and that its use is indicated in both primary and secondary anemias.

The claim that germanium dioxid is a bone marrow stimulant and useful in the treatment of anemia is based on the publications of one group of workers, Hammett, Nowrey, Muller and Iszard of Philadelphia. Apparently, germanium dioxid is nontoxic for the albino rat in amounts of 180 mg. per kilogram of rat, and man tolerates over 2 gm. of the drug without toxic symptoms. It seems that germanium dioxid was suggested by Hammett et al. as a possible stimulant of the erythropoietic system on account of its position in the periodic system of the elements and certain analogy to arsenic. The Philadelphia workers report an increase of from one to five million red cells per cubic centimeter in the albino rat following the administration of germanium dioxid. Observations were not made after fourteen days following the last dose of the drug. The only direct evidence of bone marrow stimulation was the hyperemic appearance of the bone marrow and an apparent increase in neucleated red cells by microscopic examination. There was also an increase in the polychromatic staining cells in the peripheral circulation. While control animals were observed, the animals given germanium dioxid were inadequately controlled before administering the drug. Only one observation on man is recorded by Hammett et al. No period of control is given. Twenty-four hours after the first dose, the red blood count increased from five million to six million five hundred and fifty thousand, then fell back to nearly the original count, and subsequently showed some fluctuation during the remainder of the period of observation, not considered significant by the Council's referee who examined the evidence.

Independent work which bears on the therapeutic value of germanium dioxid comes from Minot and Sampson of Boston, Alexander of Waterbury, Conn., and Garvin of the Mayo Clinic. In criticism of the Philadelphia work, Minot and Sampson correctly pointed out that this work failed to demonstrate that there was any significant increase of immature red cells or other bone marrow elements in the blood stream. Minot and Sampson gave rabbits maximum doses of germanium dioxid without any significant change in the blood. Furthermore, they gave germanium dioxid to eight patients with anemia (two with pernicious anemia, one with purpura haemorrhagica, one with chronic lymphatic leukemia, two with chronic blood loss, one with cancer of the stomach and one with chronic focal sepsis). Their results are adequately stated in the following quotation:

"There occurred in none of these eight patients any significant alteration in the numbers of reticulated red cells, platelets, or bone marrow white cells, or in the characters of the bone marrow elements, so that there was no evidence to suggest any increase of marrow activity as a result of taking germanium."

No clinical benefit was noted. Alexander used germanium dioxid in the treatment of three pernicious anemia cases without any beneficial effect. Garvin, in a series of well controlled cases of anemia, could not ascribe any improvement to the drug. The drug was given in acid solution (as anion) and in alkaline solution (as cation) and both orally and hypodermically. In consideration of the lack of evidence for the therapeutic value of germanium dioxid, the Council voted not to accept Geroxide for New and Nonofficial Remedies, on the ground that the claims made for it are unwarranted. This action was taken without passing on the question of the recognition of a proprietary name for a simple solution of the well known substance germanium dioxid.

Correspondence

RECIPROCITY AND MEDICAL LICENSURE IN CALIFORNIA

To the Editor:—In the article by Raymond Pearl on the "Distribution of Physicians in the United States" (THE JOURNAL, April 4), it is shown that in 1920 there were in the Pacific division of the United States 24.4 physicians per 10,000 of population, while in the second highest group, the West North Central division, there were only 17 physicians per 10,000 of population. That is, the Pacific division in 1920 had 43.5 per cent. more physicians in proportion to the population than any other division of the United States. It is probable that the percentage at the present time, five years later, is even greater than this. In the state board number of THE JOURNAL, May 2, it is shown that in 1924 California issued reciprocity certificates to 388 physicians, while only sixteen physicians left California by reciprocity for other states. The state that issued the next highest number of reciprocity certificates was Ohio, with 133, and then Massachusetts, with ninety-five. In 1923, California gave 490 reciprocity certificates, while only forty-one left California by reciprocity with other states, and so it has gone for a number of years, the physicians licensed in California by reciprocity being far in excess of those licensed by examination.

Now, the California law requires that physicians who were licensed in other states prior to 1901 shall pass an oral examination in order to be licensed in California. We find that a very large percentage of those applying for reciprocity in California are physicians who were licensed elsewhere prior to 1901, and to these we must give an oral examination.

This whole situation throws the California board into an unprecedented situation, and creates for it an amount of work that is unprecedented in the history of state boards.

It is the conception of the California board that it is its duty to select from this mass of material those physicians who are reasonably safe as custodians of the health of the people of California. It is our object, as far as the law allows, to raise gradually the average efficiency and integrity of the medical profession of California, and we conceive this to be our duty. However, under the present reciprocity laws,

in the great migration of physicians to California we feel that our efforts are, in a large degree, thwarted. In an effort to remedy this situation, we recently introduced in the legislature a bill amending the reciprocity section of the medical practice act, but this bill, unfortunately, met with opposition and died in the committee of the assembly after it had passed by unanimous vote in the senate.

It is obvious that the only measure that we can take to improve the standard of the medical profession in California is to make our examinations more and more stringent, and even this will not have a selective action on that large group of physicians licensed in other states since 1901, and who must be admitted by direct reciprocity to practice in California.

I believe that it is generally recognized by state boards that, though there are exceptions to the rule, the migratory physician who is willing to leave his practice and his friends of years is not the most desirable acquisition to a community, and our experience in the oral examinations of those licensed before 1901 in other states confirms us in this belief.

Although we realize that our efforts will bring on us considerable criticism, I believe that our position will be understood by all who take a fair minded view of the situation, and I believe that this board will continue in the policy it has adopted as long as it is entrusted with this phase of protecting the health of the people of California.

WALTER V. BREM, M.D., Los Angeles.
Member, California State Board of
Medical Examiners.

"A LACRIMAL NEEDLE AND PUNCTUM DILATOR COMBINED"

To the Editor:—In THE JOURNAL, July 5, 1924, appeared a description under my name of a lacrimal needle and punctum dilator combined. This article failed to mention that Dr. Carl Koller of New York had previously devised a lacrimal needle with a solid tip and lateral fenestration, which admirable features I had incorporated in the needle under discussion.

Dr. Koller has just called my attention to this omission (not of my making, for if you consult your files I am sure you will find my original report mentioned this fact) and though in every other feature the Tenner needle differs from the one devised by Dr. Koller, in all justice to the latter, due credit and acknowledgment should be given to him.

ARTHUR S. TENNER, M.D., New York.

PLURIGLANDULAR THERAPY

To the Editor:—A remark made by Prof. John J. Abel of the Johns Hopkins Medical School at the recent Congress of Physicians and Surgeons, while speaking on "General Considerations in Respect to the Hormones," is so good and so true and of such far-reaching importance that I cannot refrain from attempting to have it brought to the attention of the medical profession in this country and abroad through the columns of THE JOURNAL. I am quite certain that every physician will enjoy it and get his lesson from it as much as did the great gathering of representative medical men who came to Washington to hear some of the foremost authorities speak on the hormones of the body and the normal and abnormal functional activities of the glands of internal secretion.

In commenting on the many shotgun preparations of the glands of internal secretion now so extensively exploited by the commercial manufacturing houses and prescribed by physicians, Professor Abel said: "Fortunately, most of these preparations contain only a very small amount, not sufficient to do harm, of the *only* ingredient that is physiologically active when taken by mouth and absorbed through the stomach and intestines—thyroid extract. As soon as the medical profession realizes this fact *the stampede of the physicians and their patients to the pluriglandular goldfields will subside.*"

ABRAHAM ZINGHER, M.D., New York.
Assistant Director, Bureau of Laboratories,
New York City Department of Health.

USE OF ETHYL GAS

To the Editor:—THE JOURNAL, May 16, contains an article on tetra-ethyl lead by Hamilton, Reznikoff and Burnham. I wish to call your attention to a misstatement of fact occurring three times in this article.

In the first paragraph on page 1481 it is stated that:

> The distressing details . . . induced the public health officials of New York City and of the States of New York and New Jersey to forbid the use of "ethyl gasoline" on the ground of danger to the public from poison contained in exhaust gases of motor engines burning such gasoline. This prohibition has recently been rescinded in the two states, but is still in force in New York City.

On page 1483 is the following statement:

> The fact that the report was issued by a government agency gave it an authority and an air of finality, as shown by the fact that immediately after its publication the ban on the manufacture, distribution and sale of ethyl gasoline was lifted by the states of New York and New Jersey.

In the summary on page 1486 it is stated that:

> The states of New York and New Jersey prohibited for a time the use of ethyl gasoline, but rescinded this order when a report was issued by the United States Bureau of Mines.

So far as the state of New York is concerned, the facts are as follows:

No action forbidding the *use* of ethyl gasoline has ever been taken by the health authorities of New York State. Hence the statements that such action was taken and subsequently rescinded are obviously incorrect. The only action that was taken by the Public Health Council was on Jan. 20, 1925, on which date the Sanitary Code was amended by adding to Chapter VII thereof a new regulation to be known as Regulation 16, to take effect March 1, 1925, and to read as follows:

> Regulation 16. Distribution of tetra-ethyl lead in concentrated form to public prohibited. The sale or distribution of tetra-ethyl lead in concentrated form, except to refineries, bulk stations or filling stations, is hereby prohibited. Such sale or distribution shall be made in safe, sealed containers.
>
> Nothing herein contained shall be construed to prevent the sale or distribution of tetra-ethyl lead in concentrated form for experimental and research purposes or for use under special circumstances to persons whose applications therefor have been approved by the Commissioner of Health of the State of New York.

EDWARD H. MARSH, M.D., New York.
Secretary, Public Health Council,
New York State Department of Health.

"COMPLEMENTARY FEEDING OF NEW-BORN"

To the Editor:—I cannot agree with the statement of Dr. Bliss in his communication to THE JOURNAL, May 16. Much controversy has been aroused over the cause and treatment of "inanition fever," and this goes back much farther than the "last two years." A prominent Eastern pediatrician made the statement in the Section on Diseases of Children at the Boston session that "if the Lord intended the baby to have any nourishment the first few days of life He would have supplied it." The answer to this was well put in saying that this is not a question of theology.

A large number of infants need something to burn before it is provided by the mother. The gratifying results one sees when fluids, sugar solutions or milk dilutions are given to dehydrated infants more than offsets any danger there may be of the baby later refusing the breast.

I cannot agree that the general "drying out process" "does good." These babies do not "become hungrier and nurse

more vigorously." On the contrary, they quickly become toxic and refuse any form of feeding, and we have frequently to resort to intraperitoneal injections of physiologic sodium chlorid solution. Add to this the prevalent practice of giving the mother and baby castor oil, and the dehydrating process is increased.

No trouble will be encountered if we tell the mother that the complementary feeding is a temporary measure, and then instruct her in the technic of nursing and manual expression. This will increase her milk supply after she gets back home to her normal environment.

B. A. MELGAARD, M.D., Sioux City, Iowa.

EARLY PREGNANCY FOLLOWING DELIVERY

To the Editor:—Mrs. C., aged 21, white, American, an only child, menstruated last, Sept. 22, 1923, and I delivered her of a normal full term girl baby, July 7, 1924, at White Cross Hospital. She left the hospital on the fifth day by ambulance, had a normal puerperium, and the lochia serosa stopped on the thirteenth day. I saw her in January this year, and she was again pregnant and showing some early signs of toxemia, which were readily relieved by diet, rest, etc., and, April 21 this year, I delivered her of twin girls, one weighing 5 pounds (2.3 kg.) and the other, 4 pounds, 12 ounces (2.1 kg.). The babies were normal and nursed the breast at the end of twelve hours. They left the hospital at the end of two weeks, having gained 6 and 8 ounces, respectively. If these babies were premature, it was slight, and except for the size they appeared normal.

This is the earliest pregnancy I have ever encountered following labor, being exactly nine months, fourteen days, between the first delivery and the delivery of the twins.

WAYNE BREHM, M.D., Columbus, Ohio.

"ROENTGEN-RAY THERAPY IN THROMBO-ANGIITIS OBLITERANS"

To the Editor:—In their article on this subject (THE JOURNAL, May 16), Drs. Philips and Tunick report rather remarkable results with roentgen-ray therapy. They are to be congratulated on their work. Thrombo-angiitis obliterans is an extremely chronic disease, often lasting as long as fifteen or twenty years. More than 80 per cent. of all cases give a history of remissions during which the patient is free from all symptoms. These remissions occur spontaneously at almost any stage of the disease and last from a few months to several years, frequently as long as five, ten and even fifteen years. (These facts are drawn from a study of many cases at Montefiore Hospital, where the patient generally arrives after he has run the course of his diesase for years.) Temporary arrests have been reported as cures, following almost every new therapeutic innovation. In this disease, particularly, a temporary arrest of one year is not evidence of more than a remission.

When Koga, in 1912, published his reports on the use of isotonic salt solution, his conclusions were much the same as those of Philips and Tunick. He had relief from all symptoms for as long as he had followed the cases, which was two years. Since then his method has been repeatedly used, but without any effect on the outcome. We have seen temporary arrests follow the most divers treatments, only to have the disease return anew.

That Philips and Tunick obtain immediate results with disappearance of all symptoms cannot be doubted. There is a vasomotor relaxation or paralysis with a resultant increase in the blood supply to the extremity. Certainly, this is not due to "the stimulating effects of irradiation," if it is analogous to the resection of the sympathetic ganglions. In such an event, it would be due to a paralyzing effect. Granting, however, that the result is one of peripheral dilatation with increase in the superficial circulation, this in itself would have no effect on the actual pathology of the disease. With the final thrombosis of the larger peripheral vessels, the terminal gangrenous picture will again appear. It would seem to us to be particularly true in this disease when both the veins and arteries are involved.

As Philips and Tunick state, but not with sufficient emphasis, their cases have been followed only for months. At present, we cannot draw any conclusions as to the ultimate result from this form of treatment. Roentgen-ray therapy is still an empiric remedy in the many diseases in which it is employed. The etiology of thrombo-angiitis obliterans is absolutely unknown. However, any safe symptomatic form of therapy, no matter how empiric, cautiously administered, is justifiable as a temporary expedient in this distressing disease until fuller knowledge is gained.

DAVID PERLA, M.D., Bedford Hills, N. Y.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PROPHYLAXIS OF ENDEMIC GOITER

To the Editor:—Please inform me concerning the following: 1. Have any cases been reported by reliable observers, in which the iodin treatment, recommended by Drs. Marine and Kimball for the prevention of goiter in school children, has caused serious symptoms causing existing goiter to become toxic in its nature, or in any other manner? 2. Is the idea of this treatment receiving favorable consideration throughout the goiter districts of this country, or the world, speaking in a general way? Approximately how many cities and towns are using, and how many children receive this treatment? (This question is asked that I may arrive at the percentage showing serious results, if any exist.) 3. What cities have iodized their water supply? (I understand that Rochester, N. Y., and Sault Ste. Marie, Mich., have done this.) 4. Is the iodin treatment compulsory in Switzerland? 5. What is the general opinion among the representative physicians of the country, or the world, who have given sufficient study to the matter to give value to their opinions in regard to giving iodin to school children in goiter districts, as recommended by Marine and Kimball? 6. I made a survey of the school children here above the third grade and found enlargement of the thyroids, in varying degrees, in approximately 50 per cent. of them. I was instrumental in getting the treatment started in the public schools of this city, one tablet being given each week during the school year. Of course, many are taking it who have some enlargement already.

R. H. FIELDS, M.D., Eugene, Ore.

ANSWER.—1. The occurrence of "iodin hyperthyroidism" seems to be due to the use of large doses or to the continued use of iodin by a person, over 20, with adenomatous goiter. A careful search of the literature does not reveal any report of a case due to the administration of iodin preparations in the schools, according to the dosage recommended by Marine and Kimball. Perhaps the strongest attack on the abuse of iodin in the treatment of goiter is voiced by Dr. A. S. Jackson (*Journal-Lancet* 44:324 [June 15] 1924). Nevertheless, Dr. Jackson continues, "By all means, iodin should be used in the prophylaxis of goiter and in the treatment of colloid goiter in persons under 20 years of age. I believe that every school girl in the goiter belt should receive small quantities of iodin during the school year, and I am giving 10 mg. a week to girls between the ages of 12 and 20 after the method of Marine and Kimball."

2. The prevention of simple goiter in endemic goiter areas by the administration of iodin tablets to school children and by the use of iodized salt is being extended year by year. No nation-wide survey is available on which to base a numerical estimate. Iodin tablets are given the school children of the following cities (and doubtless in other cities): Ithaca, North Tonawanda, Syracuse, Watertown and Cortland, in New York State; Akron and Cleveland, Ohio, and Zurich, Switzerland. The health department of Michigan has cooperated with the state medical association, salt manufacturers and wholesale dealers, so that all table salt sold in Michigan contains small amounts of iodin. Many of the schools of West Virginia, Washington and Utah are applying this preventive method under the state boards of health.

3. Rochester, N. Y., iodizes the city water supply for one week twice yearly. It is reported that Oswego, N. Y., is planning to do the same.

4. The official goiter commission of Switzerland recommended that iodin be used in all the cantons. In St. Gall, Switzerland, the incidence of simple goiter was reduced in four years' time from 87.6 to 13.1 per cent. by iodin administration.

5. Informed opinion favors the prophylactic administration of iodin to school children in endemic goiter regions. Kimball notes that the health commissioner of Grand Rapids, Mich., after a two years' trial, during which time 15,000 children took 10 mg. of iodin once a week, stated that this was the most practical and popular health measure he had ever introduced. The "lay issue" of the *Wisconsin Medical Journal* (January, 1925) recommends preventive treatment for school children in goitrous areas. Marine states that the dangers and untoward effects of iodin when used in proper amounts are negligible, and recommends preventive work through the public school systems under medical supervision.

GLYCOSURIA DURING PREGNANCY

To the Editor:—In Queries and Minor Notes (THE JOURNAL, May 16, p. 1515) is an answer to a query regarding glycosuria during pregnancy. I should like to point out a number of fallacies. It is stated that "when a pregnant woman is on a general diet, the presence of glucose in the urine does not necessarily mean diabetes because nearly all pregnant women show sugar in the urine, even when the blood sugar is within normal limits." A copper reduction test for sugar in the urine is quite frequent in a pregnant woman, but by making special differentiating tests the sugar is found to be lactose and not glucose.

It is stated that "a blood sugar content of 0.18 mg. per hundred cubic centimeters of blood on a fasting stomach generally means diabetes and should be treated as such." The figure 0.18 is correct for per cent., but not for milligrams per hundred cubic centimeters. What is probably meant is 180 mg. per hundred cubic centimeters of blood. The arbitrary figure of 0.18 per cent. is too high, since a normal blood sugar on a fasting stomach rarely goes above 0.14 per cent. It is more generally 0.10 or 0.12 per cent. A percentage of 0.17 or 0.18 is considered the renal threshold for sugar.

In the discussion of the sugar tolerance test it is stated that "if the patient has diabetes there will be a progressive rise in the blood sugar content even after three hours." That is rarely the case, for it is unusual even in the severest cases of diabetes for the blood sugar level to continue rising for more than two hours. Of course, in the diabetic patient the blood sugar curve is always higher, so that whereas in the normal the highest point of about 0.16 or 0.17 is reached before the end of the first hour, generally during the first half hour, in diabetes the curve may continue to rise up to one and one-half hours or two hours; but from then on it will slowly fall, so that at the end of two hours or two and one-half hours it will be a number of points higher than the fasting blood sugar, but lower than the highest point reached. In the normal, the curve has generally dropped to the fasting level at the end of two hours.

It is also stated that "if the glucose test does not produce a hyperglycemia, the patient should be placed on a low carbohydrate diet." I cannot see the rationale of such a procedure. If the patient does not have diabetes and the sugar tolerance test does not show even a tendency to what we call the prediabetic stage, why should the diet be restricted, since in such a case the sugar in the urine is either lactose or is the result of a so-called renal diabetes? It is added that "with the use of insulin patients can be given fairly large amounts of carbohydrates." There is absolutely no reason for suggesting insulin in a type of case such as is cited in the query.

The answer further stated that "since Mrs. L. has sugar in the urine, even on a sugar-free diet, she perhaps has diabetes." From the details given in the query my conclusion would be just the opposite, because if only traces of sugar were found on an unrestricted diet, the glycosuria would disappear as soon as a moderate restriction of carbohydrates would be instituted, if the patient really had diabetes.

MOSES BARRON, M.D., Minneapolis.

MULTIPLE REGISTRATION UNDER THE HARRISON NARCOTIC LAW

To the Editor:—Under the instructions sent out by the Internal Revenue Office for narcotic registration, the physician is required to register each office he maintains and to pay a separate tax for each. Is this authorized by law?

——, Illinois.

ANSWER.—The Harrison Narcotic Law makes all laws relating to the assessment of internal revenue taxes applicable to the special taxes it imposes. Among the laws thus made applicable is Section 3235, U. S. Revised Statutes, which provides that the payment of a special tax shall not exempt from an additional special tax a person carrying on a trade or business in any other place than that stated in the collector's register. On this basis the Commissioner of Internal Revenue has ruled that a physician who carries on his profession from more than one office must register and pay a tax on each such office.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13. Ch., Dr. Samuel W. Welch, Montgomery.
ARIZONA: Phoenix, July 7-8. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.
CALIFORNIA: Los Angeles, June 15-18; San Francisco, July 6-9. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.
COLORADO: Denver, July 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
CONNECTICUT: Hartford, July 14-15. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.
CONNECTICUT: New Haven, July 14. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.
DELAWARE: Wilmington, June 16-18. Sec., Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.
DISTRICT OF COLUMBIA: Washington, July 14. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.
FLORIDA: Tampa, June 15-16. Sec., Dr. William M. Rowlett, Citizens Bank Bldg., Tampa.
HAWAII: Honolulu, July 13. Sec., Dr. G. C. Milnor, 401 S. Beretania St., Honolulu.
ILLINOIS: Chicago, June 23-25. Supt. of Regis., Mr. V. C. Michels, Springfield.
INDIANA: Indianapolis, July 14-16. Sec., Dr. W. T. Gott, 333 State House, Indianapolis.
KANSAS: Kansas City, June 16. Sec., Dr. Albert S. Ross, Sabetha.
MAINE: Augusta, July 7-8. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.
MARYLAND: Baltimore, June 16-19. Sec., Reg. Bd., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore.
MINNESOTA: Minneapolis, June 16-18. Sec., Dr. T. S. McDavitt, Lowry Bldg., St. Paul.
MISSISSIPPI: Jackson, June 23-24. Sec., Dr. F. J. Underwood, Jackson.
MISSOURI: St. Louis, June 23-26. Sec., Dr. James Stewart, Capitol Bldg., Jefferson City.
NEW JERSEY: Trenton, June 16-17. Sec., Dr. Alexander Macalister, State House, Trenton.
NEW YORK: Albany, Buffalo, New York and Syracuse, June 23-25. Sec., Dr. Harold Ryppins, Education Bldg., Albany.
NORTH CAROLINA: Raleigh, June 22-26. Sec., Dr. Kemp P. B. Bonner, Morehead City.
NORTH DAKOTA: Grand Forks, July 7. Sec., Dr. George M. Williamson, 860 Belmont Ave., Grand Forks.
OKLAHOMA: Oklahoma City, June 16-17. Sec., Dr. James M. Byrum, Shawnee.
OREGON: Portland, July 7-9. Sec., Dr. Urling C. Coe, Stevens Bldg., Portland.
PENNSYLVANIA: Philadelphia and Pittsburgh, July 7-11. Sec., Dr. J. George Becht, State Capitol, Harrisburg.
RHODE ISLAND: Providence, July 2-3. Dr. Byron U. Richards, State House, Providence.
SOUTH CAROLINA: Columbia, June 23. Sec., Dr. A. Earle Bonner, 906 Forum Bldg., Sacramento.
SOUTH DAKOTA: Deadwood, July 21. Dir., Dr. H. R. Kenaston, Beresford.
TEXAS: Austin, June 23-25. Sec., Dr. T. J. Crowe, 918-19 Mercantile Bank Bldg., Dallas.
UTAH: Salt Lake City, July 7. Dir. of Regis., Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.
VERMONT: Burlington, June 24-26. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 23-26. Sec., Dr. J. W. Preston, Shenandoah Life Bldg., Roanoke.
WASHINGTON: Olympia, July 6. Sec., Mr. William Melville, Olympia.
WEST VIRGINIA: Martinsburg, July 7. Sec., Dr. W. T. Henshaw, Charleston.
WISCONSIN: Milwaukee, June 30, July 1-2. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., La Crosse.

District of Columbia April Examination

Dr. Edgar P. Copeland, secretary, District of Columbia Board of Medical Supervisors, reports the oral and written examination held at Washington, April 14-16, 1925. The examination covered 16 subjects and included 80 questions. An average of 75 per cent. was required to pass. Twelve candidates were examined, all of whom passed. Five candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University		(1924, 2)	84.0, 86.5
George Washington University		(1924)	85.5, (1925) 79.4
Northwestern University		(1902)	86.8
Rush Medical College		(1924)	87.0
Johns Hopkins University		(1916) 77.4,	(1922) 87.7
Dartmouth Medical School		(1886)	75.1
University of Cincinnati		(1924)	80.0
Jefferson Medical College		(1915)	80.9
University of Toronto		(1921)	79.0

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
American Medical Missionary College		(1903)	California
Fort Wayne College of Medicine		(1892)	Ohio
College of Physicians and Surgeons, Baltimore		(1879)	Virginia
Leonard Medical School		(1909)	N. Carolina
University of Tennessee		(1892)	Oklahoma

Porto Rico March Examination

Dr. Diego A. Biascoechea, secretary, Porto Rico Board of Medical Examiners, reports the written and practical examination held at San Juan, March 3, 1925. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Two candidates were examined and passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Temple University		(1924)	80.0
McGill University		(1924)	80.5

Book Notices

TUMORS AND CANCERS. A Biological Study. By Hastings Gilford, F.R.C.S. With an Introduction by Sir Frederick Keeble, C.B.E., Sc.D., F.R.S., Regius Professor of Botany at Oxford University. Cloth. Price, 2 pounds 2 shillings net. Pp. 703. London: Selwyn & Blount, Ltd., 1925.

This book represents a belief that without the broadest kind of an understanding of cancer we cannot solve the cancer problem. Cancer, a living product, must be explainable by laws governing life, and in this book cancer is discussed almost exclusively from a broad and philosophic, that is, more or less speculative, point of view that the author designates as biologic. This is in no sense a book for the student of the clinical or anatomic forms of cancer, but rather for the student of the causation of cancer. The author takes it for granted that the prevalence of cancer is increasing steadily, largely it seems on the basis of Hoffman's statistical work, which so far does not seem to have been confirmed satisfactorily and which perhaps never will be confirmed, and this assumed increase in prevalence is interpreted as an indication that a radical change is necessary in present habits of life. Broadly speaking, cancer is presented as a disease of disordered growth caused by "degeneration of human material" as a result of modern civilization, and unless we change our ways, cancer inevitably will go on increasing. This is the burden of the book, and if the premise on which the author bases his conclusions is false, then the whole structure collapses. The book may serve to challenge thought; it cannot be said to carry conviction. The discussion of benign tumors is incidental to the main topic. It will be a shock to many to read that the potato and other similar tuberous growths are plant tumors, according to the author. The style is easy, flowing and rather prolix, and a great many unimportant details are included.

FRACTURES AND DISLOCATIONS. Immediate Management, After-Care, and Convalescent Treatment With Special Reference to the Conservation and Restoration of Function. By Philip D. Wilson, A.B., M.D., F.A.C.S., Instructor in Orthopaedic Surgery, Harvard Medical School, and William A. Cochrane, M.B., Ch.B., F.R.C.S., University Tutor in Clinical Surgery, University of Edinburgh. Cloth. Price, $10. Pp. 789, with 978 illustrations. Philadelphia: J. B. Lippincott Company, 1925.

This book is a compilation of the work of an American and a British author who have had a wide experience in the subjects discussed. It represents in all major respects the views entertained by the staff of the "Fracture Service" of the Massachusetts General Hospital, of which staff one of the authors is a member. The purpose of the book is to present modern conservative methods of treatment in such a form that the general practitioner will not be confused by a great many different methods of treatment. The operative treatment has not been emphasized, although the general principles of operative treatment are discussed. The book is profusely illustrated; dissections of fractures and dislocations are clearly reproduced, and the line drawings are good. The references to the literature are well chosen. The authors have freely drawn from the material contained in excellent standard works; namely, the "United States Army Splint Manual," "Jones' Orthopedic Surgery of Injuries" and the "Outline of Fracture Treatment." In the latter publication, one of the authors was personally concerned. A commendable feature of the book is the anatomic description of each important bone; in some instances a concise embryologic discussion is given. Much emphasis is placed on the immediate proper treatment of fractures and dislocations. In the next edition, it is hoped that the subjects of delayed ulnar palsy and Volkmann's contracture will be discussed.

THE TREATMENT OF FRACTURES IN GENERAL PRACTICE. By C. Max Page, D.S.O., M.S., F.R.C.S., Senior Surgeon to Out-Patients, St. Thomas's Hospital, and W. Rowley Bristow, M.B., B.S., F.R.C.S., Surgeon to the Orthopaedic Department, St. Thomas's Hospital. Cloth. Price, $4. Pp. 239, with 142 illustrations. New York: Oxford University Press, 1923.

The presentation of the subject of fractures in so brief a volume may at the outset prejudice the experienced surgeon against the book. However, the work is not intended as an exhaustive treatise, but merely as "a ready work of reference for the general practitioner, the house surgeon or the medical student." As such, it is excellently done. It is compact and accurate. The more important fractures are presented with commendable clearness and completeness, in view of the space allotted to each. The text is profusely illustrated with good roentgenograms, line drawings and photographs. It will undoubtedly find its greatest field of usefulness in occasional reference by the general practitioner unskilled in fracture work.

LES DYSTROPHIES DE L'ADOLESCENCE. Etudes cliniques. Par V. Hutinel Professeur honoraire de clinique médicale infantile. Paper. Price, 16 francs. Pp. 232, with illustrations. Paris: Masson et Cie, 1924.

In this volume the author, who began his observations shortly after succeeding Grancher in 1889 at the Clinique des enfants malades, has assembled and attempted to classify and coordinate the various symptom complexes and disorders known as dystrophies, with particular reference to the recent researches on the endocrine glands and the sympathetic nervous system. Beginning with a short tracing of the evolution of the infant from fetus to adolescence, he contrasts and compares the dystrophies of early life, which are evolutionary, with those seen in later life or old age, which are regressive in type. He then takes up malformations, dystrophies of the new-born, athrepsia and the nutritional disturbances of infants, rickets, and the anemias of infancy. While his clinical descriptions are good, he fails to mention the newer physical and chemical conceptions on the nutritional disturbances and on rickets which have been brought out in this country in the last few years. The chapter on the uniglandular dystrophies, with clinical pictures, due to dysfunctions of the thyroid, hypophysis, pineal, suprarenal and reproductive glands, is followed by a chapter on the pluriglandular dystrophies, in which the interrelation of the ductless glands and the regulative rôle of the sympathetic nervous system are pointed out. Chlorosis is included at the end of this chapter as related to genital function and ovarian dysplasia, and is to be regarded, he states, as more complex than a simple anemia. In a chapter devoted to purely adolescent dystrophies, he discusses at some length habitus, osseous deformities, late rickets, and circulatory, respiratory, digestive and urinary dystrophies. The work is concluded by a comprehensive discussion of the diatheses and temperaments of adolescence, throughout which he emphasizes the rôle of the vegetative nervous system: the sympathetic, or vegetative, and the parasympathetic, or organic functional, in regulating and balancing the functions of the various interrelated organs and the diatheses resultant from irregularities in their normal actions. The last chapter is devoted to the pathogenesis and diagnosis of the common dystrophies, with treatment briefly mentioned. The work is pleasingly written, and offers a new angle from which to view these symptom complexes.

RECTAL INJECTIONS OF QUININE. By William Fletcher, M.D., Bacteriologist, Institute for Medical Research, Kuala Lumpur. Bulletins from the Institute for Medical Research, Federated Malay States. No. 1 of 1924. Paper. Pp. 20, with 10 illustrations. London: John Bale, Sons & Danielsson, Ltd., 1924.

This pamphlet is devoted to a demonstration that quinin is too irritating to be used by rectal injection. Even dilute solutions are not retained sufficiently long to be relied on for therapeutic action, and they damage the mucous membrane, as is shown by discharge of mucus and shreds of membrane.

Miscellany

STITCHING WOUNDS WITH THE MANDIBLES OF ANTS AND BEETLES

A Minor Contribution to the History of Surgery

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One so fortunate as to have the opportunity to browse over natural history books and journals is likely, if on the lookout for such, to run across many unusual and very interesting things. So it has fortunately been with me, and from time to time accounts falling under the title of this paper have been collected, until now it seems well to bring this material together into a short article.

We are all aware that, in the past, formic acid was obtained by distilling the bodies of ants—indeed, this acid owes its name to the Latin word *formica*, an ant. Furthermore, it is on record that in central Africa the native inhabitants by pressure obtain from the bodies of certain ants an oil of excellent taste for use in cooking, while the crushed bodies of the ants are eaten as we eat liver sausage. Then, again, certain ants collect and store up honey, which is eaten, while the bodies of still others are eaten as food without the extraction of oil, acid or any other product. But that ants are used in surgery is probably a new thing to the majority of the readers of this journal.

USE OF ANTS IN SOUTH AMERICA FOR SUTURING WOUNDS

William Beebe[1] speaks of wearing boots as a protection when making an onslaught on the subterranean domiciles of Atta ants in British Guiana. He writes that a year later:

"When I unpacked these boots this year I found the heads and jaws of two Attas still firmly attached, relics of some forgotten foray of the preceding year. This mechanical vise-like grip, wholly independent of life or death, is utilized by the Guiana Indians. In the place of stitching up extensive wounds, a number of these giant Atta Maxims are collected, and their jaws applied to the edges of the skin, which are drawn together. The ants take hold, their bodies are snipped off, and the row of jaws remains until the wound is healed."

Truly a very neat way of stitching a wound, but not a new one even for South America. Emile Mocquerys[2] of Rouen, France, while traveling in Brazil, observed a similar use of ants and reported it to the Société entomologique de la France in 1844 as follows:

"The savages employ the same species [*Oecodoma cephalotes*, Latr., *Formica cephalotes*, Linn.] to hold together the edges of a wound. They cause this insect to bite the two edges of a wound [when brought together], then they snip off the thorax and abdomen and hence leave only the head, which now holds the edges of the wound tightly together. It is not rare to see natives of Brazil who have thus a wound well on the way to healing held by the heads of seven or eight of these ants."

USE OF ANTS IN MEDITERRANEAN LANDS

Strange to say, both Mocquerys and Beebe are confirmed in their statements by a similar account of an almost present-day like use of ants coming from a region as remote as Asia Minor, literally thousands of miles away. The first account is by R. M. Middleton,[3] who writes in 1896 as follows:

"I have lately had the opportunity of making the acquaintance of Mr. Miltiades D. Issigonis, a Greek gentleman from Smyrna, now residing in London. Mr. Issigonis fell from his horse in Smyrna about six years ago, and received a severe but clean cut of an inch or rather more in length on the forehead above the right eye. In accordance with the custom of the country, he went to a Greek barber to have the wound dressed, and the barber employed at least ten living ants to bite the two sides together. Pressing together the margins of the cut with the fingers of the left hand, he applied the insect by means of a pair of forceps held in the right hand. The mandibles of the ant were widely open for self-defense, and as the insect was carefully brought near to the wound, it seized upon the raised surface, penetrated the skin on both sides, and remained tenaciously fixed while the operator severed the head from the thorax, so leaving the mandibles grasping the wound. The same operation was repeated until about ten ants' heads were fixed on the wound, and left in position for three days or thereabouts, when the cut was healed and the heads removed. The ant employed is described by Mr. Issigonis as being about three eighths of an inch long, very dark brown in color, and of a particularly fierce disposition. Mr. Issigonis has kindly endeavored to obtain the ants from Smyrna, and I hope that some may arrive ere long. We have together examined the specimens in the Natural History Museum, by the courtesy of Mr. W. F. Kirby, F.L.S., and Mr. Issigonis identified a rather large-headed *Camponotus* from India, not yet specifically named, as being nearer to the species in question than anything else in the National collection.

"Mr. Issigonis . . . tells me that the operation is a frequent one in the vicinity of Smyrna, and is, to the best of his belief, practiced by the Turks themselves as well as by the other nationalities found in Asiatic Turkey. Unfortunately, he can give no information as to whether this treatment of cuts is followed in Greece, European Turkey, or elsewhere."

This account in turn is corroborated by Marcel Baudouin,[4] who avers that the mandibles of ants and of certain bettles, particularly of the genus *Scarites*, have been thus used for a long time by "les opérateurs arabes" in Algeria, in Asiatic Turkey by "les barbiers grecs de Smyrne," and that even in Europe such use has been long known and practiced. The beetle used seems to be a nocturnal *Scarites* of the family *Carabidae*, whose mandibles end in small pincers which closely approach each other. His account of this surgical use of ants at Smyrna is as follows:

"Actually still at Smyrna, the Greek barbers, who are there the chirurgeons of the people, make use of these [insects] for closing different wounds. . . . Their manner of operating does not seem to be the simplest to those who are not used to it. The barber presses together the lips of the wound with his left hand, and applies each ant by means of forceps held in his right hand. The mandibles of the ant being wide open and the animal in a defensive attitude, when the insect is slowly brought to the wound it seizes the outstanding surfaces as soon as it has been brought to them, sinks its mandibles into the flesh on both sides of the wound, and remains in this position, closing each mandible against the other vigorously, and consequently holding the two edges tightly to each other. Then the barber separates the head from the thorax by a snip of the scissors, and the head with its mandibles remains in place, continuing its office though the body has fallen to the ground.

"The same operation is continued with other ants until there are some ten pairs of mandibles placed at regular intervals, and so [the wound in] the skin is stitched together by this ingenious process throughout its whole length. These [mandibles] remain for three days, after which, the uniting [of the lips of the wound] having been brought about, the heads are removed, their office being no longer necessary."

Baudouin's words leave one in doubt whether this is a new account of this phenomenon at Smyrna or a transliteration of Middleton. He does not refer to Middleton by name as he does to every other author whom he quotes, but says that such and such things are done at Smyrna, according to an English entomological periodical." What this is I have not

1. Beebe, William: The Edge of the Jungle, New York, 1921, p. 178.
2. Mocquerys, Emile: [Quelques détails sur un fourmi du genre Oecodoma], Ann. Soc. entomol. France, 1844, Bull., p. lxvii.
3. Middleton, R. M., Jr.: On a Remarkable Use of Ants in Asia Minor, J. Linnaean Soc., London **25**: 405, 1896.
4. Baudouin, Marcel: L'emploi des fourmis en médecine opératoire, Rev. sc. Bourbonnais. Manlius **2**: 252-253, 1898.

been able to find out. Middleton's article appeared in the *Journal of the Linnaean Society of London.* However, Baudouin's data about *Scarites,* as he says plainly, come from Furnari, who will be quoted presently.

Practically the same accounts, with some further historical data referring to such a use of ants in Europe in far distant days, is contained in the important work on intestinal sutures of Felix Terrier and Marcel Baudouin[5] published in the same year. These various data will be taken up in their proper chronological order later.

The account of the use of the beetle *Scarites* goes back to 1845, in which year Salvator Furnari[6] first made known to the world that this beetle is used for suturing wounds. Furnari seems to have gone to Algeria either as surgeon to certain French troops or in some other medical capacity. On his return to France he brought together his medical observations. That part dealing with the use of insects for closing wounds reads as follows:

"In most cases they [the native doctors] have recourse to a procedure, which, although infinitely simple, seems to me very ingenious. This process consists in substituting for the ordinary suture a flesh eating insect known in entomology under the name of *Scarites pyracmon.* This animal, because its two mandibles terminate at their free extremity in two little pincers, is placed on the wound in such a manner that the edges sharp and face to face find themselves between the two pincers which are brought together by the constrictive effort of the insect, and so their union is maintained. Thus, two or three *Scarites* are placed in such a manner as to bring about a continuity of things and afterward by a movement of rotation the thorax is lifted and cut off from the head. But in order to prevent the separation of the mandibles the *thebib* [doctor or medicine man?] covers the articulation made by these organs with a little very adhesive mastic. This precaution is, however, useless, because the head detached from the body preserves such a contraction of the jaws that it is necessary to break the constricted pincers in order to get rid of them.'

"This procedure strikes me as very ingenious since it seems that it would be of great utility in those cases of *autoplastic* and *blepharoplastic* where the application of needles and threads is not advisable by reason of the narrowness of the fragment, and since the pincers would not augment the chances of mortification."

Furnari communicated his data to Malgaigne, editor of the *Journal de chirurgie,* in which[7] these data are again set forth at length, especially in relation to the operation for the cure of harelip. This was evidently done that this very curious and interesting practice might be brought to the attention of the French medical men of that day.

USE IN LATE MIDDLE AGES AND EARLY RENAISSANCE TIMES

Numbers of writers on the history of medicine and surgery refer in very general and incomplete fashion to the use of ants in operative surgery in Europe in late medieval and early Renaissance times. Sprengel[8] gives the best accounts of this use of ants in Europe. These accounts have not all been verified, since all these books are, so far as I know, to be found in this country only in the Library of the Surgeon General's Office, Washington, and because of their extreme rarity and great value cannot be loaned. However, a number of the originals together with various translations have been consulted in the library of the New York Academy of Medicine and the data to be set forth checked therein. Furthermore, there can be no doubt as to Sprengel's accuracy, since his accounts check up absolutely not only with the foregoing but also with the accounts of various other medical historians whose works have been consulted. These accounts of this use of ants in Europe will now be set out in a strictly backwardly moving order.

The latest of these old European ant suturers was Leonard Bertapa[g]lia, a professor in the University of Padua in the fifteenth century. He seems never to have had his little work on surgery published separately, but his tract (No. II) "De Vulneribus" was incorporated in Guy de Chauliac's "Cyrurgia," Venice, 1499, presently to be referred to, and also in two later editions of de Chauliac's book, which appeared at Venice in 1519 and 1546. In Chapter VIII of the "De Vulneribus" it is learned that for suturing wounds of the *small intestine* he placed great faith in ants' jaws. This is an entirely new use of ants for suturing wounds, but as will shortly be seen was a widespread one in southern Europe at this time.

Terrier and Baudouin allege that Gabriel Fallopio (1523-1562) "in his work [presumably on wounds] cites the means utilized by the ancients, and among them the use of ants." I have been unable to check this up. Presumably it is contained in his work "Opuscula tria; Tractatus de Vulneribus," etc., Venice, 1569. Fallopio, the discoverer of the fallopian tubes, studied medicine and taught at Ferrara, removed to Pisa, and finally became professor of anatomy at Padua, at that time the medical center of Europe and of the world.

Another old surgeon whose work, like Bertapaglia's is also known to us only in Guy de Chauliac's book, is Brunus of Calabria, perhaps better known as Brunus Longoburgensis or Longobucco. He was a friend of Petrarch's and also a professor at Padua, his days falling in the thirteenth century. Beyond the mere statement that he also sutured wounds by the aid of ants, nothing can be given here. His "Cyrurgica Magna" was written in 1352, but seems never to have been published separately. It was incorporated under his name in Guy de Chauliac's "Cyrurgia," Venice, 1499, and also in the later editions of 1519 and 1546.

A contemporary of Brunus was Mondino (Mondini) da Luzzi, also called Mundinus de Lentiis (1250-1325 or 1326), a distinguished Italian anatomist (said to have been among the first to dissect the human body) and a professor of medicine at Bologna. An edition of his "Anathomia" (Anatomia?), a little book[9] of twenty-four leaves, is extant bearing neither date nor place of publication, though these are believed to be Leipzig, 1493. An undoubted edition is "Anothomia," Venetiis, 1494. Other editions are 1507, 1513 and 1541—all these being in the Surgeon General's Library. Of interest here is the fact that he is said to have continued to sew up wounds of the small intestine with ants' heads even after other sutures had been devised.

The earliest of the medieval ant suturers was Albucasis, an Arabic physician, who lived and practiced in Spain. The date of his birth is not known, but he died in 1122. It is difficult to say when his surgical notes were first published because they may have been embedded in works published from 1484 on, whose titles give no indication of surgical matters. His "Methodus Medendi" was issued at Argentoratum in 1532, possibly in an abbreviated form. Certainly a full edition of 335 folio pages bears the imprint Basiliae, 1541. His "De Chirurgia Arabici et Latini" (Channing, editor) was printed at Oxford in 1788. A modern French version by Le Clerc is "La chirurgie d'Albucasis," Paris, 1861, and from it (Book II, Chapter 87) the following citation is taken. Possibly he is herein referring to the Alexandrine school of empirics, which flourished from about 250 B. C. to 200 A. D.

"Some doctors of the sect of the empirics [experimenters, pragmatists] are reported to make use of the following method of treating intestinal wounds of small extent. They go at the

5. Terrier, Felix; and Baudouin, Marcel: La suture intestinale, histoire des différentes procédés d'enterrophe, Paris, 1898, pp. 3-4.
6. Furnari, Salvator: Voyage médical dans l'Afrique septentrionale, Paris, 1845, pp. 310-312.
7. J. de chir. 3:118-119, 1845.
8. Sprengel, Wilhelm: Geschichte des chirurgischen Operationen, Part 2 of Kurt Sprengel's Geschichte der Chirurgie, Halle, 1819, pp. 671, 673, 675, 676, 682, 684.
9. Copies of this are in the library of the New York Academy of Medicine and in the New York Public Library.

matter as follows: They take ants with large heads, bring together the edges of the wound, and apply an ant with gaping mouth to the two lips of the wound. As soon as it has closed its mouth by bringing the mandibles together, they cut off the head, which remains from that time attached to the wound and does not open any more. They then take another ant, which is placed next to the first, and continue to apply others following the line of the wound. They then reduce [the danger of separation] by applying a ligature [plaster?] to the wound. Now these heads remain fast in the intestine until healing has taken place, unless some accident happens to the patient."

OPPOSITION TO ANT SUTURES

There are now to be considered five early surgeons whose opposition to wound suturing with ants' jaws finally put an end to this practice. Three of these lived toward the close of medieval times, and two at the beginning of the Renaissance. These will be considered oldest first, since their work and influence were cumulative. The first was Theodoric [1211?-1298]. Theodoric's work was never published separately but was included in Guy de Chauliac's book "Cyrurgia," Venice, 1499, 1519 and 1546. Its title page reads in part as follows: "Incepit Cyrurgia edita et compilata a divino fratre Theodorico episcopo Cerviense ordinis praedicatorum," from which we gather that he was in holy orders and that he compiled his work from preexisting manuscripts. However, the point at issue here is that Terrier and Baudouin say of Theodoric, "This surgeon, on the other hand, rejects the employment of the heads of ants, the first reaction against the ideas of the Arabs."

The next opponent of ant-head sutures is the man to whose book frequent reference has already been made, Guy de Chauliac (1300-1370), "the Father of Surgery." This distinguished man, also called Guido de Caulaco or Guigo de Chaulaco, was born at Chaulaco, a frontier town of Auverge, France. He was not a barber-surgeon, but a clerk in holy orders who studied at Montpellier, the center of medical learning in Europe, from which he graduated as "Physicus," after which he was medical attendant to three popes at Avignon—Innocent VI, Urban V and Clement VI. He was the most eminent surgeon of his day in France, indeed, in Europe. His work on surgery ("Grande chirurgie," 1363) which is declared to be not merely the first of its kind in Europe but the most important down to the seventeenth century, is said to have been first published at Lyons, in 1478. Two separate editions of the "Cyrurgia" were printed at Venice in 1480 (each of 239 folios, but with variant title pages). However, the edition previously referred to, as including the work of a number of his predecessors, is the "Cyrurgia," Venice, 1499.

This work as a whole or in parts went through a multitude of editions, at least fourteen in the fifteenth century (all of which, including the first English version, London, 1541, are among the treasures of the Surgeon General's Library), thirty-eight in the sixteenth century, and seventeen in the seventeenth. Of these, forty-three are in French, sixteen in Latin, five in Italian, five in Spanish and two in English, while the number in German is not given by the authorities. Fuller data about the man and his book may be found in Brennan's[10] translation of "Wounds and Fractures." In the "Third Treatise (Concerning Wounds), Second Doctrine," Chapter VI (p. 120 of Brennan), we read: "And in the large intestines let them be sutured . . . not with ant-head stitches, which some experimenters have done as Albucasis testifies. This is idle and useless as appears from the facts." Sprengel renders this passage (possibly taken from some other edition) "because the nature of the strange bodies was not tolerated by the intestine but they were immediately cast off"—probably as a result of mortification following infection.

10. Brennan, W. A.: Guy de Chauliac (A. D. 1363) On Wounds and Fractures, Chicago, 1923, introduction and p. 120.

Guy is followed, and his opposition to ant sutures added to, by Giovanni di Vigo (1460-1520) an eminent Italian surgeon of his day, who was born at Genoa but who practiced medicine and surgery at Rome, where he was medical attendant to the Pontiff. His book "Practica in Arte Chirurgica" appeared at Rome in 1514. It was a very popular work and passed through many editions (the Surgeon General's Library possesses twenty issued in the fifteen hundreds, including the first English version at London, 1543). Vigo is noted here because he revolted against the use of ants in surgery as an obsolete practice (Book III, Tract I, Chapter II), and the wide distribution and great influence of his book undoubtedly helped greatly in bringing about a discontinuance of the practice.

Vigo, in turn, was followed by Hieronymus Fabricius ab Aquapendente (a good name to roll under the tongue like that "blessed word Mesopotamia"). Fabricius (1537-1619), also a professor at Padua, wrote of the use of ant sutures but discarded these because the mandibles of the ants relaxed in the wounds after the ants were dead and also because the ants themselves could not be obtained in the winter. This is to be found in his "Pentateuchos Cheirurgicum," Francofurti ad Moenum, 1592 (Lib. II, Chapters 45 and 46). His work was also very popular and often republished (thirteen editions being found in the Surgeon General's Library).

The last surgeon (so far as I know) to oppose actively the use of ants in European practice seems to have been Matthäus Gottfried Purmann (1642 or 1649-1711), who practiced surgery at Halberstadt and Breslau and published a little work on surgery in 1686. His larger book, "Chirurgia," appeared in 1690 and passed through a number of editions. He probably finished the work begun by Theodoric and Guy de Chauliac and continued by Giovanni de Vigo and Fabricius ab Aquapendente, by the ridicule which he poured on the practice of using ants' jaws for suturing wounds. From this time on, this use by European surgeons seems to have been discontinued, though Frey[11] tells us that, in a personal communication from a Dalmatian physician, the statement was made that at that time (1895) such use was not infrequent among the common people in Dalmatia.

USE OF ANT SUTURES IN INDIA

It is interesting to note here that, so far as the data thus far set forth justify a statement, the use of ants for suturing wounds among civilized people both medieval and modern is confined to the circle of the Mediterranean—Spain, France, Italy in former times; Algeria, Asia Minor, and Dalmatia in recent days—warm regions where ants abound and where they may be obtained throughout the greater part of the year. However, it now becomes necessary for us to turn our attention to a region far distant from the Mediterranean and to a time as far away from Albucasis as the Mediterranean is distant from the Bay of Bengal. For in India the suturing of intestinal wounds by the use of ants antedates the Christian by possibly 1,000 years, and from this region the Arabs probably carried the practice westward. It is of record that both Arabs and Persians, in about the year 600 A. D., had translations of the great Hindoo works on medicine presently to be referred to.

In the early medical writings of the Hindoos are found two distinct references to the suturing of intestinal wounds by the ancient Hindoo practitioners. I have found numerous obscure references to this procedure, but the direct references and statements are contained in Girindranath Mukhopadhyaya's "The Surgical Instruments of the Hindus."[12] The original citations are found in the Atharva Veda, the fourth division of the Vedas or books of knowledge of Sanskrit literature and

11. Von Frey, R.: Ueber die Technik der Darmnaht, Beitr. klein. chir. 14:1-3, 1895.
12. Mukhopadhyaya, Girindranath: The Surgical Instruments of the Hindus, Calcutta, 1:208-209, 1913.

"the oldest literary monument of Indian medicine." The age of the Atharva Veda as generally agreed on is not later than 1000 B. C. and may possibly be earlier.

Chronologically, the later of these two references is to the Susruta Samhita (Susruta Collection of [Medical and Surgical] Knowledge), Book (section or division) IV, Chapters or Lessons ii and xiv—an ancient treatise on Hindoo medicine. Susruta, whose predilection was markedly toward surgery, is said to have been the son of the sage Visamitra and a contemporary of Rama, and is reputed to have studied medicine and surgery under Dhavantari, the Hindoo Aesculapius and King of Benares—Benares being the seat of ancient Hindoo medical science. Mukhopadhyaya says: "Susruta describes the use of living black ants to close incisions on the walls of the intestines, during the operation for intestinal obstruction, after removing the scyballi, stones, etc. He advises us to remove the bodies of the ants, leaving their heads fixed on the margins of the incision, in the act of biting. Then the intestines should be replaced with the ants' heads sticking to them." In another place: "If by any accident the abdominal muscles be incised and the intestines come out of the gaping wound, Susruta recommends us to allow black ants to bite the exposed coils of intestines before replacing them into the abdomen." The latter is not very clear, and furthermore one wonders what becomes of these heads, whether they become absorbed or remain intact and finally become encysted.

As to the date at which Susruta lived, worked and wrote, there is much uncertainty. Mukhopadhyaya has gone pretty thoroughly into this and feels satisfied that the evidence points to the fact that he could not have lived later than 1000 B. C., while he may have flourished earlier. He is one of the three oldest of Hindoo medical sages.

There have been innumerable manuscript copies of Susruta's work made by many commentators, and a considerable number of editions have appeared in Sanskrit. One of these, edited by Sri Mahusudana Gupta in two volumes, was printed at Calcutta in 1835-1836, and another in one volume by Pandit Jibananda Vidyasagara at Calcutta in 1873. F. Hessler published a Latin version in three volumes at Erlangen, 1844-1850, and also a volume of comments and annotations (in Latin) issued in fascicles at Erlangen, 1852-1855. No complete English version exists, so far as I know. U. C. Dutt published the beginning fascicle of an English version at Calcutta in 1883, but died shortly thereafter. A. Chattopadhyay brought out two continuing fascicles in 1891. However, his work was deemed unsatisfactory, and a new translation was begun by Hoernle, and the first parts were issued in the "Bibliotheca Indica" in 1897. This seems to have gotten no further, and so far as I know we have no complete English version.

I have examined all these fascicles, but none of them extend far enough to catch the wanted reference. The only completed edition to which I have had access is F. Hessler's "Susruta's Ayurvedas, Id Est: Medicinae Systema a Venerabile D'Hanvantari Demontratum a Susruta Discipulo Compositum . . . In Latinum Sermonum Vertit Dr. Franciscus Hessler," Erlangen (in parts), 1844-1850. I render Hessler's Latin as follows:[13] "Some say that the intestine has been also bitten together by the great head of an ant." From Chapter XIV, Abdominal Tumors, comes the following: "Likewise in the region of the large intestine, the physician extracts the obstruction, purges the intestine, holds together the incised edge of the intestine, and closes it by having it bitten by black ants. The intestine being bitten, he takes away the bodies of the ants, leaving indeed only their heads and in this old way it is said he brings about the reunion and stitches it."

Older than the Susruta Samhita is the Caraka Samhita. The Hindoo account runs that Brahma or Prajapati, his son, taught the Ajurveda or Science of Life (in short, medicine), to Daksa. Eventually it came to Indra, who taught a learned sage named Bharadwaja, who in turn became the preceptor of a number of pupils, who reduced this teaching to writing. Of these written accounts, that of Agnivesá was deemed best. Agnivesa's treatise in turn was revised, edited, and probably expanded by Caraka. This, then, is the Hindoo attempt to explain the origin and the undoubted great antiquity of the Caraka Samhita.

Now the name Caraka or Charaka seems to be a generic name or title for the chief court physician of the ancient Hindoo kings, and from the standpoint of chronology the difficulty lies in determining which Caraka is meant. To determine this point is hopeless, and all that can be said is that Hindoo medical tradition and modern research assign this work (originally written, we will presume, by the original Caraka) to great antiquity, certainly placing it anterior to Susruta. In this conclusion Mukhopadhyaya seems to agree since he (like the other authorities) places Caraka as the earliest of Hindoo writers on medicine. Caraka, it may be noted, dealt more with the medical side of the healing art, in contrast with Susruta, who was preeminently a surgeon.

In the Caraka Samhita," we read of the "use of ants for the obliteration of small perforations in the intestines, but he [Caraka] takes away the ants before replacing the gut in the abdominal cavity." This, then, is apparently an older as it certainly is a less definite statement of the use of ants—such a statement as one would expect to find in an older writer compared with later ones.

This citation I have not been able to verify. The New York Public Library contains an English version in fifty-seven parts, publication of which was begun by Avenish Chandra Kaviratna and continued after his death by his son. Whether this is complete or not I cannot say, but as the major divisions are very indistinctly indicated I was unable to locate Book (section or part) VI, Lesson xviii, in which the foregoing imperfect citation is to be found.

CONCLUSION

It may be stated that herein are brought together definite citations to show that the use of living ants to bite fast and thus suture wounds persists today in northern South America, was prevalent on the southern and eastern shores of the Mediterranean from eighty years ago down to thirty years ago, was the standard practice in Spain, France and Italy in days just preceding the coming of Renaissance times, and reaches back to remote antiquity in India—that its time span is from 1921 A. D. to 1000 B. C., a range of nearly 3,000 years.

Verily there seems to be nothing new under the sun.

13. From the section "Chikitsitast'hana, id est Therapia," Chapter II, On Wounds, p. 63.

14. Caraka Samhita, Book VI, Lesson xviii.

INCIDENCE OF ILLNESS IN GENERAL POPULATION

A true picture of the ill health and, therefore, of the problems to be attacked by those who are engaged in preventing disease, is not adequately portrayed by death statistics, observes Edgar Sydenstricker (*Pub. Health Rep.* 40:279 [Feb. 13] 1925). The obvious reason for this is that mortality records by definition do not include the cases of illness that are not fatal, to say nothing of the suffering and the lowered vigor and the lessened efficiency among the living. A study of illness in a general population group in a typical small city not only shows the inadequacy of mortality statistics for this purpose but suggests the kind of picture that complete morbidity records would afford. Looking at it in broad outline only, it was found in the group of persons studied that more than 100 cases of illness occur annually for each death. More than half the morbidity was due to respiratory diseases. The ratio of respiratory illnesses to

deaths from respiratory causes was more than 300 to 1. Diseases and disorders of the digestive system caused an annual illness rate of 117 per thousand but a mortality rate of less than 1 per thousand, a ratio of about 200 to 1. The "general diseases" epidemic and nonepidemic composed principally of those diseases against which public health effort has been mainly directed caused only 11 per cent. of all illnesses. While deaths occur principally in infancy and in old age, ill health, as measured by the incidence of illness, occurs with comparatively little variation throughout life. It is prevalent among the young, those in the "prime of life," and the aged, without much discrimination.

Medicolegal

Procedure After Reinstatement Has Been Refused

(Russell v. Dibble, Director of Licenses (Wash.), 231 Pac. R. 18)

The Supreme Court of Washington says that in 1915 respondent Russell, being then a licensed physician and surgeon in that state, was convicted of the crime of abortion. Later in the year, after a hearing before the board of state medical examiners, an order was entered revoking her license, such action being in accordance with the statutory provision for revocation of license on "conviction of any offense involving moral turpitude," and the order was upheld by the courts. About a year after the revocation of the license, the governor of the state issued to the respondent a pardon. She then petitioned the board to revive her license, on the ground that the pardon had the legal effect of annulling the revocation. The board refused to reinstate her, as it did again something like three years ago. In June, 1924, she petitioned the superior court for a writ of mandate ordering the director of licenses (who under the administrative code now performs the duties formerly imposed on the board of state medical examiners) either to enter her name as a regularly licensed and practicing physician and surgeon, or to show cause why he should not do so. The trial court overruled a demurrer to her petition, and after a hearing on the merits entered a decree which ordered the board of medical examiners to correct their records and reenter her name as a regularly licensed and practicing physician of the state. From this decree the director of licenses, who had been substituted in the stead of the board of medical examiners, appealed; and on that appeal the supreme court holds that his demurrer should have been sustained, reverses the decree of the superior court, and directs that court to dismiss the action.

The supreme court agrees with the contention that the respondent had no right to the writ of mandate, this court having often held that such a writ will not issue if there is a plain, speedy and adequate remedy by appeal.

It was contended that the right of appeal given by the state statute does not apply to facts such as existed here, but applies only where the license is refused or where a license is revoked or suspended. If the act is strictly construed and the words held to their narrow meaning and no effort is made to get at the legislative purpose, it may be that the board of state medical examiners was given power only to issue or refuse to issue original certificates and renewals thereof and suspend and revoke licenses. But it will not do to read the statute too strictly. We must get at the legislative intent. Taking the acts as a whole, it is plain that the legislature intended to vest in the board of state medical examiners full and complete power over the right to practice medicine and surgery in the state, and that was the question involved here. It also seems plain that a right of appeal was given from any order which the board was entitled to make. The respondent's argument would lead to her own destruction, because if this court gave the narrow construction contended for by her, then the demurrer to her petition for the writ of mandamus should have been sustained, because the board of examiners and the director of licenses would have no power to do the thing which she was demanding of them, and consequently could not be compelled to perform it.

But the supreme court has no doubt that the board of examiners, during its régime, had, and the director of licenses now has, power under the statute to act on the facts existing here, and since a right of appeal was intended to be given from any and all actions of the board or director, it must follow that the respondent had a clear right of appeal from the refusal of the board to reinstate her. Appeal statutes are remedial in their nature and should be liberally construed. If the respondent had appealed from the action of the board, this court would certainly not have thrown her out of court, because so to do would have been to stick in the surface of the question and not go to its heart.

Nor was the right of appeal inadequate, for such delay as would have occurred in that connection would not be unreasonable under the circumstances. Besides this, on appeal the court would have full power to go into the merits of the controversy, because the statute provides that such matters shall be tried de novo (anew), as civil actions are.

Injuries from Use of Soda Ash Classed as Accidental

(Ward v. Beatrice Creamery Co. (Okla.), 230 Pac. R. 872)

The Supreme Court of Oklahoma says that the plaintiff's petition stated that while he was an employee of the defendant company and working at a place where a high degree of heat was required, in the process of sweetening cream by the use of soda ash he was burned, scalded and salivated, and his body and features were disfigured, whereby he was permanently disabled. To justify his commencing this action in the district court, the plaintiff contended that he was not entitled to recover compensation under the workmen's compensation act, because his injuries were not the result of an accident. The supreme court, however, holds otherwise, and that a demurer to his petition was properly sustained on the ground that the injuries suffered by him were accidental injuries and as such came within the exclusive jurisdiction of the state industrial commission. While it was true that nothing happened suddenly to the plaintiff, yet his condition was brought about by the continuous use of the soda ash in the heated condition of the place in which he had to work, between the months of June, 1922, and March, 1923. The term "accidental injury," as used in the workmen's compensation act of Oklahoma, must not be given a narrow meaning, but is to receive a broad and liberal construction, with a view of compensating injured employees, when the injury results through some accidental means, was unexpected and undesigned, or may be the result of mere mischance or of miscalculation as to the effect of voluntary action.

Medical Services for Children of Divorced Parents

(Ehrich v. Ehrich (N. Y.), 207 N. Y. Supp. 219)

The Supreme Court of New York, Appellate Division, Second Department, says that the plaintiff sought to compel the defendant to reimburse her for expenditures made by her for medical services for one of their children, and expenses incidental thereto. The necessity of the services and their efficacy were not denied. The defendant merely said that he should not pay because he did not in advance approve the physician by whom the child's disease was diagnosed or the treatment to which it was afterward submitted. The decree of divorce existing between the plaintiff and the defendant provided that the defendant should properly support, educate and maintain each of their children during minority, but that otherwise the plaintiff should have the sole custody, care and control of the children. The plaintiff's care and control of the children would not be sole if she were obliged to consult the defendant and obtain his consent before she could do anything for the children. That would be joint care and control. No situation could be suggested wherein the exercise of sole control would be more essential than in the selection of a physician and the prompt furnishing of medical treatment. The defendant had been deprived of the right of joint control of the children. The situation of the parties was such that joint control was no longer practicable. The

defendant, however, had not been relieved of his legal duty to support and maintain the children. The decree did not change that, and only regulated it in a minor degree.

An agreement entered into a few days before the decree was made contained a provision that the plaintiff would not "incur any liabilities for or on the credit of Mr. Ehrich for the support, education and maintenance of any of the children of the parties without the written consent of Mr. Ehrich." It was contended that this limited the plaintiff's right to reimbursement for these expenditures. But the court does not so construe it. The court thinks that it merely expressly denied to the plaintiff the right to pledge the defendant's credit without his consent. It did not say that he was not liable for any expenditures that the plaintiff might make without his consent. She must, if the expenditure was not consented to by him, pay the bills and then compel him to reimburse her. This did not rob this provision of all value to the defendant. In any controversy between the plaintiff and the defendant, different rules were applicable than would be applicable between the defendant and another claimant. Wherefore an order denying reimbursement to the plaintiff for the expenditures in question should be reversed, on the law and the facts.

Compulsory Roentgen-Ray Examination—Indemnity

(Lawrence v. Pickwick Stages, Northern Division, et al. (Calif.), 229 Pac. R. 885)

The District Court of Appeal of California, First District, Division 2, in affirming a judgment in favor of the plaintiff for damages for personal injuries consisting of a multiple fracture of the left shoulder and contusion about the shoulder, says that it was urged that the trial court erred in not ordering a roentgen-ray examination of the plaintiff. The defendant asked the court to appoint a disinterested physician at the expense of the defendant for the purpose of making a physical and roentgen-ray examination of the plaintiff. The court ordered the physical examination, but declined to make an order requiring the plaintiff to submit to a roentgen-ray examination without his consent, on the ground that there was always a possibility of injury in connection with the taking of roentgen-ray plates. The plaintiff refused to give his consent to a roentgen-ray examination unless he should be given a bond indemnifying him against injuries that might possibly result to him from the taking of the pictures. Since the defendant contended that such an examination was important to its case, and since the plaintiff was willing to submit to the same on being indemnified against injury, there seems no good reason why the defendant should not have so indemnified him. The evidence was required by the defendant; if it involved any cost in money to secure it, that was a proper charge against the defendant, and if it involved any cost in physical injury to the plaintiff, that was, equally, a matter for which the defendant should pay.

When Incapacity and Suffering Do Not Invalidate Wills

(Griffin et al. v. Union Trust Co. et al. (Ark.), 266 S. W. R. 289)

The Supreme Court of Arkansas, in affirming a judgment sustaining the validity of a will, says that the jury was instructed that old age, physical incapacity, and partial eclipse of the mind will not invalidate a will if the testator has sufficient capacity to remember the extent and condition of his property without prompting, to comprehend to whom he is giving it, and to be capable of appreciating the deserts and relations to him of others whom he excludes from participating in his estate. He is not required to do all these things, but should have capacity to do them. Physical suffering, no matter how intense or how long its duration, will not render one incompetent to make a valid will, so far as mental capacity is concerned, unless it has so affected his mind as to render him incapable of comprehending the act of making the will and of remembering his relatives and their deserts and appreciating the same and of remembering and disposing of his estate. The giving of these instructions was assigned as error, but this court is of the opinion that they were correct declarations of the law on the subject mentioned.

Society Proceedings

COMING MEETINGS

Maine Medical Association, Bar Harbor, June 23-25. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.

Montana, Medical Association of, Lewistown, July 8-9. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.

New Jersey, Medical Society of, Atlantic City, June 18-20. Dr. J. B. Morrison, 97 Halsey Street, Newark, Secretary.

North Pacific Pediatric Association, Portland, June 29. Dr. E. J. Barnet, Paulsen Building, Spokane, Wash., Secretary.

Pacific Northwest Medical Association, Portland, Ore., June 29-July 1. Dr. Frederick Epplen, Paulsen Building, Spokane, Wash., Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Fortieth Annual Meeting, held in Washington, D. C., May 5-7, 1925

(Continued from page 1777)

THE DUCTLESS GLANDS

General Considerations in Respect to the Hormones

DR. JOHN J. ABEL, Baltimore: In the last thirty years we have come to the view that, however changed the autonomic system may be, we have advanced a step forward from the older view of a neurologic lesion and have come to the conception of chemical substances that can act at a distance on the metabolism or in other ways. That is, we are now living in the day of chemical messengers, and there have been established a number of these principles as related to the endocrine organs. We can talk about fifteen substances in the body that may have hormones, though it is only definitely proved in regard to certain structures which produce such substances as thyroxin, insulin, secretin, pituitary extract, epinephrin and the hormones of the sex glands. Allied principles are found in what we call vitamins, which are really hormones of extraneous origin. Carrel also speaks of "trefones," a class of substance used to keep alive structures of the embryo chick heart for years and years. This substance is a chick embryo juice, and it probably belongs to the class of hormones, although Carrel has not made a distinction between nutritive bodies and bodies of which only a minute quantity is necessary to produce a reaction. Botanists also speak of hormones. It is interesting to know that they entered this field before we did. They recognized a primitive substance influencing growth and repairing tissue. Nothing is more interesting than to study botanic literature covering this field. One botanist speaks of the substances as "altruistic organs." The botanists study the reactions of the single cell in regard to the work of the cytoplasm; therefore, we have got to consider the cell as the basis of all life, whether vegetable or animal. I think that this broader view is one which should be exceedingly helpful to us. The consideration of these substances, only a few of which have been clinically determined, has important results in this way. It is the first time a bridge has been thrown from the side of biochemistry to that of morphology. As clinical men are well aware, there are interrelationships between organs of internal secretion. Morphologists are giving us splendid results in this field, especially in experimental zoology, in relation to the sex glands. Although morphologic relations are well established, the chemical side is not so well proved, because, though insulin and pituitary extract react on each other, there is no effect if one is injected first. There is another important point in our experiments. I do not believe that there is enough weight given to it clinically. When one of these active principles is injected into the blood, it is not like a serum injection. The state of the receptor's organism must be considered. Another point to consider is the form of molecule that is injected. The levogyric form of a particular molecule will give the greater effect, while the dextrogyric form will give only one-eighteenth the effect of the former. It may be possible for the body itself to effect these changes from the levogyric to the other form. We want to do with all the endocrines what chemists have done with the suprarenal principles, but there are great difficulties because the older chemical methods do not apply and we must invent

new methods. New difficulties arise in the pursuit of this study, and we make headway only when we happen to touch on new methods. That makes the study fascinating. But we are making progress very slowly. We are just at the beginning of our knowledge. We know very little, and each problem that comes up opens up a whole field of work for physiologists, neurologists and clinicians. The chemist can work only as a chemist. We must test every principle on the body.

The Gonads and Sex Physiology

DR. C. R. STOCKARD, New York: The gonads, or sex glands, are extremely complex, when compared to the rest of the glands of internal secretion. A point of extreme biologic importance is that they are the only glands of internal secretion that exist in the vertebrates and the invertebrates in the same form. These glands have definite effects on other structures. During the embryonic period they have influence on the development of the internal and external genitalia. They are dormant from birth to the prepubertal stage, and then bloom out as the factors causing secondary sex characteristics. During growth and sex development they regulate the shape of the head and the height of the body. These glands have a rhythmic development, the periods of which repeat themselves. We can easily review a number of points which show that these glands have an internal secretion, chief of which are their effects on the organism. The problem of castration influences this question. We are apt to think of transplantation experiments as something modern, but in 1672 John Hunter transplanted testes in chickens and got some effects. Many workers have done experiments along this line of producing feminization results. They have transplanted ovaries into males and testes into females. These experiments have brought out considerable evidence that there exists an antagonism between the male and the female gonad. The problem of hormone production is a very different matter in the testis to that in the ovary. The antagonism between the ovary and the testis is interesting and important. In the differentiation of sex we express the female character as the X chromosome, and the male as possessing XX chromosomes. The chromosomes have to do with the stem, or sex, determination, which is established at the time of fertilization of the ovum, at which time there are either two X chromosomes or only one. Differentiation of sex is a developmental problem, and has to do with secondary sex characteristics. It may be inhibited or changed by castration, but the chromosome influence is irreversible and immutable. The specific hormone effect produced by the gonads may act secondarily on other endocrine glands. The results of some experiments are spectacular, but they are of no use unless they are standardized. So far we have been unable to do this. We must have an indicator for the effect of the product; the indicator must be standardized; then the gland product must be standardized. In attempting to work out an accurate method by which the results of experiments can be measured, we have started by working out a guinea-pig unit which is standardized. Later we hope to be able to work out a human standard.

Some General Features of Endocrine Influence on Metabolism

DR. WALTER B. CANNON, Cambridge, Mass.: The existence of steady states in the body and some agencies maintaining them, in spite of factors which would otherwise disturb them chemically, thermically or structurally, has long been recognized. The problems of the control of these states is bound up in physiologic factors which are also influenced by the internal secretions. An attempt at present to give an elaborate theory of the interrelations of the endocrine glands would be premature or even misleading. The necessary facts are not at hand. But the idea that endocrine factors play an important rôle in establishing and maintaining physiologic equilibrium is reasonable, and not too theoretical.

DISCUSSION

DR. HARVEY CUSHING, Boston: We have advanced enormously; but, as we advance, the horizon broadens and seems to get farther away. There is one class of men who should not be permitted to soar—the surgeons. They must keep their feet on the ground. I do not think that the contribution of surgery has been empiric. The work done was due to observations, which were, perhaps, accidental. Thirty years ago, in the early meetings of this congress, there was a symposium on cretinism and on thyroid disease in general. How simple the thing seemed in those days compared with the present complexity of the subject. The congress that meets here in 1955 will no doubt smile at our feeble interpretation of these disorders. Surgery has a small part, and it will probably be less as time goes on.

DR. LLEWELLYS F. BARKER, Baltimore: Clinicians are apt to consider this type of thought as hypothetic or speculative. The feeling is often expressed that there should be no hypotheses or theory in endocrinology, only facts. There is nothing more erroneous than that idea. To get at facts you must first have some theory. On the other hand, you must know when you are speculating. The great injury is done by assuming that hypothetic constructions are established principles; but there is no reason why we should not make use of hypotheses as such. Such theories are extremely useful in directing experimental work, and in clinical work as regards controlling observations and keeping up records. The interest in endocrinologic studies all over the world is amazing. Three thousand works appear every year. Some men should sift facts and bring certain ideas together, presenting them in a clear way. Endocrinology is of interest to every physician and every surgeon because the endocrine organs have to do with control of phenomena in every part of the body. A rational explanation of these phenomena is highly desirable. This domain is as yet essentially an empiric one. The majority of conceptions have come from clinical men who have made empiric observations and reported them. If one thinks of the contributions made clinically—Addison's work on the suprarenal glands; Kocher's studies on cachexia thyreopriva, and the work of Marie on myxedema—one can gage the importance of empiricism to clinical men. Rational explanations are coming from scientific men in laboratories, but their number is, as yet, amazingly small. The attempt has been made to put forward as established principles statements that were nothing more than hypothetic constructions. We need more skepticism and less blind confidence, but the skepticism should be an eclectic skepticism. A word about uniglandular and pluriglandular theories: The glands are undoubtedly related and affect one another. Theoretically, every syndrome must be pluriglandular, but as yet syndromes are predominently uniglandular and the study of them is as such rather than by pluriglandular involvement. One point is very striking in the latter respect: A great variety of pathologic phenomena can be made to disappear by the substitution product from a single organ. The general therapy is uniglandular in principle, even though scientific study shows a whole series of processes. Theoretically, the number of endocrinopathies is enormous. Each gland has six possible conditions: normal, hypofunctioning, hyperfunctioning, dysfunctioning, and the combinations of hypofunctioning and hyperfunctioning. If there are nine glands giving internal secretions, the possible combinations mathematically worked out could cause 10,770,095 different syndromes. Dr. Abel spoke of fifteen secreting glands; and if we were to estimate all the possible combinations of these we should have a reductio ad absurdum. Some simplifying process must be arrived at or the outlook for therapy would be nearly hopeless. One can imagine the joy of commercial drug houses; they could put out more than 46,000 stock preparations. We must not, therefore, go too far into pluriglandular therapy. Fortunately, among all the pluriglandular formulas on the market, commercially, only one substance is likely to have any effect; that is, thyroid. Therefore the administration of these polyglandular mixtures which are so much advertised will probably do very little harm as long as the amount of thyroid is not enough to harm the patient. As soon as the public learns this, what Dr. Abel calls "the stampede to the pluriglandular gold fields' will subside. What the future of this work will be it is rash to prophesy. Clinical syndromes will have to be revised, and we shall have to study gland structure until we have reached a point in biochemistry at

which we have each active principle. The outlook of the subject for the future leads us to believe that there will be endocrines to control growth and to modify constitutional disposition by the application of pharmacodynamic combinations. I do not think that any one can say that more harm than good has come from the study of endocrinology. That is a false statement. There is much honest work being done despite bombastic theory. We must set our faces against ignorant credulity, on the one hand, and cynical incredulity, on the other. Let us all work together to advance knowledge in this important field.

Use of Digitalis in Hyperthyroid Cases

DR. H. S. PLUMMER, Rochester, Minn.: Prior to 1916 we thought digitalis was dangerous, but later we became interested in its use in cases with auricular fibrillation. It gave good results in the disappearance of edema. At this time the mortality began to rise in the more dangerous cases. It reached 3.5 per cent. and stayed there. We gained the impression that digitalis is toxic to the central nervous system; that digitalis increased the toxic effect, although the patients were not overdigitalized from the cardiologic standpoint. We, therefore, stopped digitalis. Then we pushed on all the wrecks of humanity for operation—the diabetic patients, the patients with acidosis, etc., but got no increased mortality, except from accidental giving of digitalis. I have the same impression of the use of digitalis in persons over 40, without hyperthyroidism. If one puts digitalis on the top of alcoholism or on the top of toxicity from infection, one will see the same phenomenon. I believe there is a system of overdigitalization going on in the country which leads to many deaths of patients who would die without it, provided they were in a little more advanced stage.

DISCUSSION

DR. JOSEPH MILLER, Chicago: Have you used compound solution of iodin in the past years in cases of toxic adenoma? Did you consider that the cause of the reduction of mortality?

DR. PLUMMER: We have used compound solution of iodin in toxic adenomatous goiter and found that it would start the adenoma hyperfunctioning. We have known this for fifteen years. Therefore, we have not given iodin to people with hyperfunctioning adenoma after 25 years of age. There is no evidence that iodin would do harm in hyperfunctioning adenomatous goiter. There is nothing to prevent adenomas from getting a higher and higher rate after iodin, but it will not give the peculiar symptoms that characterize that disease. I was asked to give compound solution of iodin to the adenoma patients, but I stopped it so as not to get results confused with the digitalis question.

DR. C. W. EDMUNDS, Ann Arbor, Mich.: I have found that digitalis is tremendously toxic to diphtheritic dogs. The heart of a dog will ordinarily stand 25 c.c. of tincture of digitalis intravenously, but with the diphtheritic dogs in bad shape, a 4 c.c. dose is sufficient to throw the heart into a tremendous danger of stoppage from overaction of the vagus with tremendous slowing of the heart. A dose of 6 c.c. caused great irregularity of the heart and delirium. At necropsy the hearts showed necrosis, congesion and fatty degeneration. Digitalis seemed to be two or three times as toxic as in the normal heart.

DR. HENRY A. CHRISTIAN, Boston: We see almost no toxic adenomatous types of goiter in Boston, so that I have no experience on that subject; but the last year or so we have been gaining the impression that the present use of digitalis is giving us individuals who show cerebral toxic effects, usually coming on after digitalis has exerted a distinct effect on the heart by improvement of the circulation. Perhaps we are doing harm in the cardiac cases by not stopping digitalis soon enough. I think it is important to pay a little more attention to the toxic effects of digitalis. Probably we shall get better results in regard to the most effective way of using digitalis if we consider the dosage from that point of view.

DR. H. F. SWIFT, New York: I would like to call attention to the results of the use of digitalis in rheumatic fever, with active rheumatic carditis. We have found electrocardiographic changes which can be reproduced very well by the use of digitalis—alterations in the cardiogram with a lengthened P-R interval. We have had to reduce the dose that we used in the noninflammatory heart to one-third or one-half the ordinary full dose. We were getting symptoms of marked digitalis poisoning.

DR. EMANUEL LIBMAN, New York: I have had little experience along this line in cases of thyroid disease. My experience has been mainly in cases of severe rheumatic fever, in which I have observed toxic manifestations from doses of digitalis which ordinarily would not have been followed by them. There was at least one death that could be attributed to the drug. When in a patient suffering from rheumatic fever, to whom digitalis is being administered, symptoms arise which are suggestive of so-called cerebral rheumatism (which is due in certain instances to a rheumatic encephalitis), we must keep in mind the possibility that the clinical picture may be due to the digitalis.

DR. F. W. PEABODY, Boston: Quite recently I saw a man who was given a moderate dose of digitalis over a considerable period. There suddenly occurred a drop in heart rate to about 40, with a slow auricular fibrillation. The patient was extremely delirious. As the heart rate rose after stopping the digitalis, the delirium cleared. The correlation between the two made it clear that the delirium and the mental symptoms were due to digitalis. That man had no particular evidence of heart disease, but he had marked signs of alcoholism.

DR. L. A. CONNER, New York: I am convinced that there are many cases of digitalis poisoning that show this first by cerebral symptoms. In my experience it has been almost always in the cases without auricular fibrillation. It has been found a difficult matter to have my house officers understand that one cannot rely on the slowing of the heart as a trustworthy guide in such cases. I think that is a misconception that is very widespread. One is apt to meet the idea that if the pulse rate is not greatly slowed, the patients cannot be poisoned by digitalis; but they can, and they frequently are. Most of the untoward effects of digitalis occur in a group of cases without auricular fibrillation, because reliance has been placed on marked slowing of the heart rate as a guide for the toxic effect of the drug. I think that what has been said just now concerning the difference in the effects of the drug, and the greater sensitiveness in hearts under the influence of some poison, either diphtheritic, rheumatic or alcoholic, is a matter of great concern to us.

DR. JOSEPH L. MILLER, Chicago: What was the dosage in these cases?

DR. H. H. PLUMMER, Rochester, Minn.: There has been great fluctuation in the dosage in the last eight years, although with all the preparations used the mortality has stayed constant. I want to introduce a little philosophy that will lead to stopping the too frequent use of digitalis. In regard to the toxic action on the brain and on the thyroid, we were dealing with a condition caused by digitalis. I think that many deaths in many conditions occurred principally in older persons who might have cerebral edema very easily. The physiology is disturbed, and cerebral edema occurs. I am under the impression, and this is borne out by clinical observation in hundreds of cases, that cerebral edema occurs easily in older persons who have degenerative changes already. Such deaths occur in the hyperthyroid cases without overdigitalization, and they come from doses that one would hardly conceive could make trouble. It was not a cardiac death. I would watch the brain more carefully than the heart. In older persons with cardiovascular degeneration, there are various methods of dying; the picture is not always the same, but we get all the symptoms exaggerated, which are probably symptoms of cerebral edema. Older persons are on the borderline of cerebral edema, and much more commonly so than the profession has any knowledge of. I think that digitalis has an action on the central nervous system, just as alcohol has, which is independent of its action on the cardiovascular system.

Glucose Utilization in Cases of Renal Glycosuria

DR. JAMES E. PAULLIN, Atlanta, Ga.: In cases of renal glycosuria, the kidneys are supposed to be permeable to

glucose. There is constant presence of sugar in the urine, which is not influenced by diet. The blood sugar is either normal or subnormal. There are no symptoms of diabetes, and it is supposed that these patients utilize sugar normally. We have studied five cases. We first determined two basal periods. Then 100 gm. of glucose was given, following which the basal metabolic rate was taken, the blood sugar was estimated, and the respiratory quotient and the urinary sugar were figured. We deducted 15 per cent. of calories destroyed as representing protein destruction. In a patient, aged 32, who had had renal diabetes nine years, there was normal response to the glucose tolerance test. After administration of glucose the calories jumped up; the blood sugar rose about 100 per cent.; the urinary sugar increased; the respiratory quotient rose. The carbohydrate utilization of this patient was estimated as 16.7 gm. of the amount administered, or 17 per cent. of the total. The remainder was stored in the liver as glycogen. The blood sugar and respiratory quotient later fell to normal level. This work seems to prove that the idea which we have had that renal diabetic patients are able to utilize glucose in the normal manner is justified.

Observations on Pernicious Anemia Following Ileostomy

DRS. H. Z. GIFFIN and C. F. DIXON, Rochester, Minn.: The theory of the gastro-intestinal origin of pernicious anemia is an attractive one because of the marked gastro-intestinal symptoms of the disease, such as increase of bile pigments and abnormality of the bile. Hemosiderosis of the liver also suggests a relationship. The toxic substance formed by protein has been used to produce experimental anemia. Colon bacilli are very abundant in the small intestine in pernicious anemia and are also found in the stomach, and possibly under abnormal conditions a toxic substance may be formed by *B. coli*. Surgeons have found profound anemia in carcinoma of the proximal portion of the large bowel, although without marked mechanical obstruction. This suggested treatment of pernicious anemia by ileostomy, and we considered doing an ileosigmoidostomy, thus excluding the colon without removal. The first operation was done in January, 1924, on a patient with typical pernicious anemia. There was great improvement for four weeks, but this patient died later of hemiplegia. Seiderhelm reported ten cases in which two patients died after closure of the ileum. In improved cases the character of the ileostomy stool changed. Experimental work on dogs with stricture above the ilcocecal valve showed development of megaloblastic anemia, with bone marrow changes. Stricture anemia in man has been reported with rich intestinal flora above the stricture. It looks as if the small intestine has high bacterial defense against toxin from the colon.

DISCUSSION

DR. EMANUEL LIBMAN, New York: In the course of a discussion on sprue at an earlier meeting of the association, I emphasized the importance of a comparative study of sprue and pernicious anemia. It appeared to me that the toxic agents of these diseases were analogous in their action, and I suggested that search be made for gastric achylia and symptoms of spinal cord involvement, in sprue. Dr. E. J. Wood and others have developed this subject further and have clearly demonstrated the resemblances of the two diseases. The necessity of a study of the question of the possible relationship of vitamin disturbances to the clinical picture of pernicious anemia is becoming more and more evident. The rapid disappearance of the tongue lesions after ileostomy, as noted by Dr. Giffin, is a particularly striking observation.

DR. GEORGE M. KOBER, Washington, D. C.: I have found for a long time that certain obscure diseases of the bile and uropoietic system may be due to an unrational intake of protein. I recall experiments on feeding in protein intake in two companies of German infantry. The subjects were men between 20 and 22, and the test was in regard to the diet which would maintain the greatest efficiency. The diet of maximal efficiency included 9 per cent. animal protein with 71 per cent. vegetable protein, and whenever the amount of animal protein exceeded this figure, disorders of the uropoietic system manifested themselves. I would suggest that the proportions of animal and vegetable proteins in the diet be duly considered.

DR. GEORGE DRAPER, New York: We have noted pretty clearly that persons who develop pernicious anemia present certain qualities of individuality which are suggestive that they represent a rather undifferentiated type from the standpoint of maleness and femaleness. These factors are shown in the skeletal proportions also. There is an interference in the growth process and they include in this process changes reflected in the secondary characters. There may be interference with the defense of which he speaks in the intestinal tract, particularly. The rôle of the liver in the hematopoietic function is interesting in relation to the fetal period. This is seen in very severe anemias as in chronic nephritis. There is one case in the Pennsylvania hospital in which the hematopoietic functional disturbance of the liver was clearly established. Severe intestinal disturbance produces pernicious anemia in persons incompletely developed. Therefore developmental faults deprive these patients of the intestinal defense which protects the large majority of individuals from the bacteria common to the whole human race.

(To be continued)

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Electrotherapeutics and Radiology, New York

68:81-126 (March) 1925

Sanitarium Methods of Treatment of Sciatic Syndrome and Allied Conditions. V. C. Kinney, Wellsville.—p. 81.

Rôle of Roentgen Rays in Strobell Chemical Operation for Cancer of Breast. C. W. Strobell, New York.—p. 88.

Standardization of Physical Therapeutic Measures. J. W. Travell, New York.—p. 93.

Therapeutic Exercise. H. E. Stewart, New Haven and Waterbury, Conn.—p. 96.

Electrotherapy in Paralysis Following Peripheral Nerve Lesions and Poliomyelitis. R. Kovacs, New York.—p. 98.

American Journal of Tropical Medicine, Baltimore

5:97-210 (March) 1925

Intestinal Amebiasis. W. M. James, Panama, C. Z., and W. E. Deeks, New York.—p. 97.

Intestinal Amebiasis. R. W. Runyan, Panama, R. P.—p. 137.

Value of Roentgen Ray in Estimating Extent of Amebic Infection of Large Intestine. J. J. Vallarino, Panama, R. P.—p. 149.

Distribution and Complications of Amebic Lesions Found in 186 Postmortem Examinations. H. C. Clark, Honduras, C. A.—p. 157.

Pathology of Pellagra. J. Denton, Boston.—p. 173.

American Review of Tuberculosis, Baltimore

11:85-174 (April) 1925

*Heliotherapy in Treatment of Pulmonary Tuberculosis. R. H. McCutcheon, South Mountain, Penn.—p. 85.

*Heliotherapy in Advanced Pulmonary Tuberculosis. I. D. Bronfin, Sanatorium, Colo.—p. 96.

*Occult Tuberculosis. L. M. Warfield, Ann Arbor, Mich.—p. 112.

*Development of Clinical Tuberculosis from Occult Tuberculosis. L. M. Warfield, Ann Arbor, Mich.—p. 122.

Occult Tuberculosis with Gastro-Intestinal Symptoms. L. M. Warfield, Ann Arbor, Mich.—p. 130.

*Complement Fixation in Tuberculosis with Wassermann's Antigen. M. Pinner, Chicago.—p. 139.

Nature of Specific Substances in Broth-Culture Filtrates of Tubercle Bacilli. L. Dienes and E. W. Schoenheit, Asheville, N. C.—p. 146.

Chemical Composition and Antigenic Properties of Tubercle Bacillus. L. Dienes, E. W. Schoenheit and L. D. Scheff, Asheville, N. C.—p. 151.

Studies in Tuberculosis. II. Clinical Study of Tuberculin Reactions with New Derivatives of Tuberculin. F. C. Eberson, San Francisco.—p. 163.

Heliotherapy in Treatment of Pulmonary Tuberculosis.—McCutcheon reports his experiences with heliotherapy in the treatment of 105 cases of pulmonary tuberculosis; in fifty

cases, the lung moisture was markedly decreased; in sixty-one cases, the cough was entirely absent or markedly decreased. The result of sun treatment on expectoration was that it became looser, freer, easier to bring up, and increased during and for an hour or two after each period of insolation, but that the amount of expectoration during the rest of the day, and especially in the early morning, was much decreased. Another most favorable effect of the sun was noted in the amount of sleep the patients could take. Nearly half of the patients reported good appetites through their entire time of sanatorium treatment. Sixty-one patients gained an average of 5 pounds from the beginning to the end of their treatment. The treatment had no untoward effect on the incidence of hemorrhage. Practically no changes in temperature and pulse were noted under sun treatment. Colds were entirely absent.

Heliotherapy in Advanced Tuberculosis.—Bronfin's experience with heliotherapy has not yielded encouraging results in advanced pulmonary tuberculosis. Extrapulmonary lesions are invariably favorably influenced by heliotherapy.

Occult Tuberculosis.—People who have indefinite complaints and who are not up to their standard of health, Warfield says, are usually suffering from some form of infection which is difficult to discover. A certain number of these people are suffering from infection by the tubercle bacillus which does not express itself in the frank textbook incipient stage of the disease but which expresses itself as a toxemia. Such cases must be studied carefully and differentiated from early stages of other chronic infections. The intracutaneous tuberculin reaction is of great value in the differentiation of this group.

Development of Clinical from Occult Tuberculosis.—Two conclusions are drawn by Warfield from a study of cases, of which four reported are types. First, there is a very definite train of symptoms caused by the tubercle bacillus growing in the body. The symptoms are protean in character, the patients are not absolutely ill, but they are more or less incapacitated for their best work. This is occult tuberculosis. Second, these cases are proved to be due to infection with the tubercle bacillus by the course and progression of the symptoms and signs which at times lead gradually and by insensible stages to actual demonstrable tuberculosis.

Complement Fixation in Tuberculosis with Wassermann's Antigen.—Wassermann's new antigen for complement fixation in tuberculosis has been applied by Pinner to the serum of 646 patients, and was found to react in 71.5 per cent. of active tuberculosis. It also reacted with the serum from clinically arrested cases and a number of clinically nontuberculous cases.

Arkansas Medical Society Journal, Little Rock

21: 211-255 (April) 1925

What Physician Should Stand for in His Community. T. Douglass, Ozark.—p. 211.
History of Medicine and Sanitation in Arkansas. E. Ellis, Fayetteville.—p. 213.
Important Minor Points in Obstetric Practice. S. B. Hinkle, Little Rock.—p. 216.
Relation of Chemistry to Medicine. H. Hale, Fayetteville.—p. 221.
Cirrhosis of Liver with Tuberculous Complications. E. E. Barlow, Dermett.—p. 224.
Prevention and Treatment of Surgical Infections. A. E. Chace, Texarkana.—p. 227.

California and Western Medicine, San Francisco

23: 417-528 (April) 1925

Present Status of Electrocardiography in Heart Disease. W. J. Kerr, San Francisco.—p. 417.
Conditions Which Interfere with Results in Industrial Injuries. S. J. Hunkin, San Francisco.—p. 424.
*Malignant Tumors of Kidney. F. Hinman and A. A. Kutzmann, San Francisco.—p. 429.
*Doubtful Tumors—Shall We Excise Piece for Diagnosis? A. R. Kilgore, San Francisco.—p. 434.
*High Protein Ration as Cause of Nephritis. N. Evans and E. H. Risley, Loma Linda, Calif.—p. 437.
Congenital Nasal Atresia. F. L. Rogers, Long Beach, Calif.—p. 443.
Intensive Treatment of Congenital Syphilis. H. Schussler, Jr., San Francisco.—p. 446.
Secondary Hypertrophic Osteoarthropathy Following Metastatic Sarcoma of Lung. L. Bryan, San Francisco.—p. 449.
Spinal Anesthesia in Urology. J. C. Negley, Los Angeles.—p. 452.
Twenty-One Consecutive Ambulatory Back Injuries, with Special Reference to Fractures of Spine. H. W. Spiers, Los Angeles.—p. 455.

Malignant Tumors of Kidney.—Hinman and Kutzmann state that the incidence of malignant tumors of the kidney is to the extent of 0.25 to 1 per cent. in adults; 0.06 to 0.1 per cent. in children. Of tumors in general, they constitute from 0.5 to 2 per cent. in adults, and about 20 per cent. in children.

Tumor Biopsy.—Kilgore's plea is not against diagnostic incision of tumors, but against delay between such incision and complete operation.

Protein as Cause of Nephritis.—The control animals fed by Evans and Risley on an ordinary diet for corresponding periods showed no kidney changes. Animals fed on the high protein ration for prolonged periods showed nephritic changes, without exception. The authors believe that the experiments carried out by Newburgh, McCollum and others, as well as by themselves, prove definitely that high protein diet is capable of producing true nephritis in the animals used. There is no question but that there are other factors, such as bacteria, bacterial toxins, mineral poisons and other toxic materials which are basic in the etiology of nephritis, but it seems very possible that the high protein ration generally used by people in temperate zones is a definite etiologic factor. The results of the authors' experiments substantiate the correctness of the low protein ration as one of the important measures in the prophylaxis and therapy of nephritis. Since meat is the protein food used most abundantly it would seem wise at least to limit its use in the average dietary to one half the present quantity consumed, and to correspondingly increase the use of fruits and vegetables, which are low in protein and at the same time yield vitamins and salts of great value.

Canadian Medical Association Journal, Montreal

15: 347-460 (April) 1925

*Arterial Disease and Renal Incompetence. O. Klotz, Toronto.—p. 347.
*Anatomic Changes in Relation to Functional Disturbances in "Chronic Nephritis." H. Oertel, Montreal.—p. 356.
*Congenital Dilatation of Ureters. L. P. Lansdowne and W. Boyd, Winnipeg.—p. 361.
Case of Amaurotic Family Idiocy in Infant of Nonsemitic Parentage. T. A. Lebbetter, Yarmouth, N. S.—p. 367.
Case of Cirrhosis of Liver in Child 14 Months of Age. O. J. Day, Winnipeg.—p. 370.
*Use of Dihydroxyacetone in Treatment of Diabetes Mellitus. I. M. Rabinowitch, Montreal.—p. 374.
Radiation Treatment of Benign Diseases of Female Pelvis. G. E. Richards, Toronto.—p. 382.
*Treatment of Pernicious Vomiting of Pregnancy. H. B. Atlee, Halifax, N. S.—p. 388.
Physician in His Relationship to Industrial Toxication. V. E. Henderson, Toronto.—p. 390.
Preservation of Blood Samples for Chemical Analysis. A. T. Cameron and J. E. Williamson, Toronto.—p. 393.
*Diabetes Insipidus. E. S. Mills, Montreal.—p. 395.
Medical Examination of School Children. R. G. Ferguson.—p. 397.
Results of Operations on Thyroglossal Tract; Thyroid Secretions. A. P. Bertwistle, Leeds.—p. 400.
*Case Showing Unusual Distribution of Icteroid Pigmentation. J. Meakins.—p. 402.
Three Cases of Creeping Myiasis in Saskatchewan. S. H. Corrigan, Lampman, Saskatchewan, and C. E. Corrigan, Winnipeg, Manitoba.—p. 403.
Case of Epidermolysis Bullosa. C. R. Bourne, Montreal.—p. 404.
Case of Streptococcus Septicemia Cured by Mercurochrome. I. H. Noble, Ottawa.—p. 406.
Multiple Ulcers of Duodenum and Stomach with Diverticulum of Duodenum. Perforation of Duodenum and Pulmonary Infarct. R. A. H. MacKeen, Montreal.—p. 407.

Arterial Disease and Renal Incompetence.—In Klotz' opinion, there is no evidence that arteriosclerosis is a precursor of, or an essential factor in, the production of chronic nephritis, but rather that arteriosclerosis may make its appearance in the renal vessels in one of two ways; either as an independent arterial disease unassociated with the changes contained within the kidney structure (in which case it involves the main renal arteries), or it makes its appearance in the small arterioles of the renal parenchyma concurrently with lesions appearing in the glomeruli and intertubular stroma. These arterial lesions are likely the result of the same agent causing the inflammatory fibroses in the renal structure proper, and hence should be considered in

conjunction with the kidney disease in general. Furthermore, the nature of the arteriosclerosis is not constant, at times consisting of intimal hyperplasia, endarteritis or degeneration; at other times consisting of medial hypertrophy; and at still others showing perivascular fibroses, as are encountered in chronic inflammatory processes. Under these conditions, and depending on the nature and extent of the arterial involvement, it assists in further deranging the functional activity of the kidney. It is not uncommon to find that lesions comparable to those found in the renal arterioles are to be found simultaneously in the small vessels in many parts of the body.

Anatomy and Functional Disturbances.—Oertel emphasizes the importance of anatomic reconstruction of an organ in relation to its functions under pathologic conditions.

Congenital Dilatation of Ureters.—Three cases of congenital dilatation of the ureters are reported by Lansdowne and Boyd. In two of these cases membranous folds in the urethra connected with the verumontanum were responsible for the dilatation. In the third case there was no obstruction, but there was an associated congenital defect of the spinal cord.

Dihydroxyacetone Treatment of Diabetes.—Emil Fischer first suggested the therapeutic use of dioxyacetone. This suggestion was based purely on chemical consideration and attracted apparently little clinical attention. At that time it was obtained by bacterial action on glycerin and the quantities available were obviously insufficient to permit anything in the nature of an extended clinical trial. Recently, some of the physiologic properties of this substance have been investigated. In animals glycogen storage in the liver was found to be greater for given doses of dioxyacetone than for glucose. In healthy subjects a lowering of the blood sugar was noted following the administration of 60 gm. and no marked hyperglycemia was noted following the administration of 150 gm. In diabetics similar results were noted, and in only severe cases was there noted a hyperglycemia and this was less marked than when glucose was given. Rabinowitch reports his observations with this drug in a number of cases of diabetes.

Treatment of Vomiting of Pregnancy.—Atlee has been using the suggestive method of treatment for all cases of vomiting of pregnancy, including the pernicious type, both in hospital and private practice, for the last four years and has found it most satisfactory.

Diabetes Insipidus.—Mills reports a case of diabetes insipidus which occurred in the course of chronic ulcerative pulmonary tuberculosis and responded promptly and completely to the administration of pituitary extract.

Unusual Distribution of Icteroid Pigmentation. — The interest in Meakins' case was found in the distribution of the jaundice. This was intense in the face, conjunctiva and upper part of the trunk and arms. There was also edema of the feet, legs, thighs, external genitals and back, and of the trunk to the level of the diaphragm. At the line of edema it gradually faded and below this it was not obvious. In the skin of the abdomen, back and legs, no icteroid discoloration was visible; the skin remained quite white. It was found that the distribution of the jaundice, so far as the skin was concerned, coincided almost exactly with the area in which there was no edema. The urine contained bile and the blood drawn from the median basilic vein gave a positive direct and a strongly positive indirect van den Bergh reaction. The edema fluid drawn from the feet and legs was found to be clear and colorless with no indication of icteroid hue. Both the direct and the indirect van den Bergh reactions were negative.

Illinois Medical Journal, Oak Park

67: 241-320 (April) 1925

Medicine and Fundamental Sciences. C. K. Edmunds, Baltimore.—p. 261.
Twenty-Two Cases of Lung Abscess. P. S. Winner, Chicago.—p. 267.
Infection, and Its Relation to General and Local Disease. C. H. Mayo, Rochester, Minn.—p. 274.
Diathermy in Medicine and Surgery. D. Kobak, Chicago.—p. 276.
Renal Lithiasis. W. F. Braasch, Rochester, Minn.—p. 284.
Primary Sarcoma of Tonsil. E. McGinnis, Chicago.—p. 287.
Sound Proof Room in Institutional Treatment of Psychoses. S. Brown, Kenilworth.—p. 288.
Semilunar Cartilage Disease. P. H. Kreuscher, Chicago.—p. 290.
Gas Pains; with Aids Toward Prevention. H. H. Cox, Chicago.—p. 292.
Otosclerosis. E. E. Poos, Belleville.—p. 293.
Visibility of Gonococci in Water. B. N. Bengtson, Chicago.—p. 296.
Limitations of Chlorin Gas Treatment. F. L. Alloway and C. S. Bucher, Champaign.—p. 298.
Tonometry. H. S. Gradle, Chicago.—p. 298.
Problem of Quackery. A. M. Cox, Madison, Wis.—p. 301.
*Use of Convalescent Serum in Prophylaxis of Measles. G. H. Weaver and T. T. Crooks, Chicago.—p. 304.
Enigma of Appendicitis. R. E. L. Gunning, Galesburg.—p. 307.
Complications of Mastoid Operation. C. M. Robertson, Chicago.—p. 308.
Venereal Disease Problem. C. M. McKenna, Chicago.—p. 310.
Ectopia Lentis: Three Cases. M. L. Folk, Chicago.—p. 314.

Prophylaxis of Measles.—One hundred susceptible children were given a 5 c.c. dose of convalescent measles serum by Weaver and Crooks. Eighty-one were entirely protected, nine developed atypical measles and ten developed the disease in a typical form. Of the ten developing unmodified measles, only three were given the serum within five days of exposure. From various reports the protective power of whole blood from persons who have had measles sometime previously seems fairly well established. Where convalescent serum is unavailable, this method may be used by the general practitioner to good advantage.

Johns Hopkins Hospital Bulletin, Baltimore

36: 225-324 (April) 1925

*Identity of Hematoidin and Bilirubin. A. R. Rich and J. H. Bumstead, Baltimore.—p. 225.
*Extrahepatic Formation of Bile Pigment. A. R. Rich, Baltimore.—p. 233.
*Biology of Streptococcus Erysipelatis. I. Agglutination and Agglutinin Absorption. K. E. Birkhaug, Baltimore.—p. 248.
*Chronic Nephrosis. R. H. Major and F. C. Helwig, Kansas City, Kan.—p. 260.
*Adenomyoma of Vesicovaginal Septum and Supernumerary Ovary. L. Brady, Baltimore.—p. 266.
*Spontaneous Contractions of Pregnant Human Uterus. K. C. Sun, Baltimore.—p. 280.
Physiologic Anatomy of Embryonic Heart. II. Development of Heart Beat in Chick Embryos, Development of Irritability to Electrical Stimulation. P. N. Johnstone, Baltimore.—p. 299.

Identity of Hematoidin and Bilirubin. — Hematoidin obtained from the hemorrhagic contents of a cyst of the omentum was subjected by Rich and Bumstead to the physical and chemical tests and reactions which are characteristic of bilirubin, and in every instance it behaved precisely as did a control of pure bilirubin. These facts are offered in support of the belief that hematoidin and bilirubin are identical.

Extrahepatic Formation of Bile Pigment.—The experiments done by Rich demonstrate that if the circulation be maintained through the entire musculoskeletal system after the complete removal of the liver and all the other abdominal organs from a dog, the plasma, which immediately after the operation is colorless and contains no detectable trace of bile pigment, may become yellow in color after some hours and given a positive test for bilirubin; that the bilirubin may increase gradually in amount in the plasma; and that a definite tissue jaundice may develop after the lapse of sufficient time. This confirms the work of Mann, Bollman and Magath.

Biology of Streptococcus Erysipelatis.—Birkhaug's experiments indicate that it is possible to differentiate by immunologic methods a group of hemolytic streptococci causing erysipelas from the group of hemolytic streptococci responsible for scarlet fever, on the one hand, and on the other, from the large series of miscellaneous hemolytic streptococci producing a variety of pyogenic infections.

Chronic Nephrosis.—There are many features of chronic nephrosis which suggest that it is primarily a disturbance of metabolism. This conception of the disease is stressed by Epstein and discussed by several writers. In the case cited by Major and Helwig the presence in the liver of an intense lipoid infiltration similar to that seen in the kidney, is suggestive evidence that this is a metabolic disease.

Adenomyoma of Vesicovaginal Septum.—The two main features of interest in Brady's case were an adenomyoma of the vesico-uterine space, and a supernumerary ovary situated on the anterior surface of the broad ligament.

Spontaneous Contractions of Pregnant Uterus.—Spontaneous contractions of the musculature of the pregnant human uterus have been studied graphically by Sun at all periods of gestation, and arguing by analogy with the lower animals and by the fact that spontaneous contractions were observed in the uterus of a six-month fetus, it must be assumed that the human uterus contracts rhythmically throughout life, certainly from before birth until after the menopause. In pregnancy the contractions differ in various individuals in the varying periods of pregnancy, labor and the puerperium. Likewise, differences are noted according to the portion of the uterus from which the specimen is obtained, as well as according to the length of time it has been preserved outside the body. The characteristic, passive behavior of the lower uterine segment has been demonstrated.

Journal of Industrial Hygiene, Baltimore

7: 105-144 (March) 1925

Examination of Heart in Industry. N. C. Gilbert, Chicago.—p. 105.
Toxicology of Hydrogen Sulphid. H. W. Haggard, New Haven, Conn.—p. 113.
Blast-Furnace Gasing. R. C. Engel, Cleveland.—p. 122.
Industrial Poisoning by Inhalation. L. Preti, Milan, Italy.—p. 124.

Journal of Nervous and Mental Diseases, New York

61: 449-559 (May) 1925

*Experimental Study of Romberg Sign. F. S. Fearing, Stanford University, Calif.—p. 449.
Huntington's Chorea in Twin Child; Case. N. M. Owensby, Atlanta, Ga.—p. 466.
*Malignant Spheno-Occipital Chordoma: Case. J. L. Eckel and W. F. Jacobs, Buffalo.—p. 471.

Study of Romberg Sign.—The study of attention with reference to reflex activity, both in connection with the maintenance of equilibrium and the simpler reflexes, for example, the knee jerk, is suggested by Fearing.

Malignant Spheno-Occipital Chordoma.—Eckel and Jacobs assert that their case is the twenty-first reported as showing clinical symptoms and having origin from the spheno-occipital region and it is the third case in the American literature. The case showed evidence of malignancy and there was considerable bony destruction at the base of the skull and of the upper cervical vertebrae. The tumor had the usual characteristics of the reported chordomas in that it was smooth, firm and lobulated on section. It compressed the left pons, medulla, cerebellum and occipital lobe of the brain and also the left upper cervical cord, and also several of the cranial nerves. No degeneration of the bulb or upper cord could be found in careful examination of sections made from those areas. In this respect it resembled other recorded cases.

Journal of Urology, Baltimore

13: 383-495 (April) 1925

Data with Regard to Lesions of Nerves of Urinary Tract. W. F. Braasch, Rochester, Minn.—p. 383.
Resection of Unilateral Fused Kidney; Case. W. G. Sexton, Marshfield, Wis.—p. 399.
*Practical Application of Creatinin Renal Function Test. N. F. Ockerblad, Kansas City, Kan.—p. 411.
Watch Glass Method of Mounting as Applied to Small Museum Specimens. D. M. Morison, San Francisco.—p. 425.
Use of Radiotherm. E. L. Keyes and C. W. Collings, New York.—p. 439.
Diverticulum of Large Intestine Communicating with Urinary Bladder; Two Cases. C. M. McKenna.—p. 443.
Varicose Veins of Bladder Cause of Urinary Hemorrhage. W. S. Pugh, New York.—p. 455.
*Syphilis of Urinary Bladder. C. C. Saelhof, Chicago.—p. 461.
Median Bar Formation. J. A. Lazarus, New York.—p. 465.
Congenital Obstruction at Urethrovesical Orifice. W. S. Ehrich, Evansville, Ind.—p. 471.
Primary Carcinoma of Left Seminal Vesicle. O. Lyons, Denver.—p. 477.
*Can Normal Persons Be Carriers of Ducrey Bacillus. C. C. Saelhof, Chicago.—p. 485.
*Treatment of Chancroid with Tartar Emetic Solution Intravenously. H. Goodman, New York.—p. 489.
New Double Catheterizing Cystoscope for Use in Infants and Children. P. M. Butterfield, New York.—p. 493.

Creatinin Renal Function Test.—Ockerblad finds Major's creatinin kidney function test a very valuable and reliable addition to present methods of estimating renal function. It is not intended to supplant the phenolsulphonephthalein test but to supplement it.

Syphilis of Bladder.—A case of syphilis of the bladder is presented by Saelhof, which responded well to antisyphilitic measures with a recurrence of original symptoms after discontinuance of treatment. Death ensued from a bronchopneumonia complicated by cerebrospinal syphilis. Necropsy showed syphilitic ulcerations of the bladder; microscopic sections showed typical syphilitic lesions.

Carriers of Ducrey Bacillus.—A gram-negative streptobacillus having the morphologic and cultural characteristics of the Ducrey bacillus was isolated by Saelhof in 8.6 per cent. of twenty-six selected men and 12.6 per cent. of thirty-eight selected women. No gross genital lesions were demonstrable. Abrasions of the mucous membrane were not observed. These organisms may have been in a latent stage, but it is possible that the organism may be virulent to others and harmless to the carrier.

Antimony Treatment of Chancroid.—The use of antimony potassium tartrate solution is proposed by Goodman for the treatment of chancroid. He gives the drug intravenously in concentration of 1:100. The initial dose has been 5 c.c. The dose is given as often as once every second day, or longer intervals to once in five days. The number of injections have been as low as four; with the highest number in one patient as eight. The dose may be increased by 1 c.c. at each injection, but no dose greater than 12 c.c. has been administered. Except for fleeting pain across the shoulder of the arm into which the injection was being given, there have been no ill or side effects. No patient has vomited.

Laryngoscope, St. Louis

35: 259-344 (April) 1925

Postural and Nonsurgical Treatment of Empyema of Antrum. S. L. Olsho, Philadelphia.—p. 259.
Accident in Antrum Operation. P. C. Means, Santa Barbara, Calif.—p. 264.
Minutiae of Surgical Technic of Simple Mastoidectomy. J. L. Mayhaum, New York.—p. 265.
Technic of Modified Radical Mastoid Operation. J. R. Page, New York.—p. 268.
Choked Disk Occurring in Mastoiditis with Extradural Abscess: Case. S. Jesberg, Los Angeles.—p. 271.
Contraindications to Surgery in Acute Mastoiditis. M. S. Ittelson, Brooklyn.—p. 273.
Acute Mastoiditis Caused by Streptococci Associated with Pneumococci. P. S. Stent, Philadelphia.—p. 280.
Vacuum Mastoiditis. G. F. Keiper, Lafayette, Ind.—p. 288.
Osteoma of Frontal Sinus: Case. F. H. Lee, Richmond, Va.—p. 291.
Herpes Zoster Oticus Relieved by Sphenopalatine Ganglion Treatment. S. L. Ruskin, New York.—p. 301.
Dacryostenosis Following Ozena Operation and Its Cure. J. Maliniak, Cincinnati.—p. 303.
Urticaria of Larynx. S. Cohen, Philadelphia.—p. 309.
Idiopathic Abscess of Larynx. S. Cohen, Philadelphia.—p. 311.
Actinomycosis of Tongue. R. A. Barlow, Madison, Wis.—p. 314.
Necessity of Speech and Voice Re-Education; Nasality. M. F. Gifford, San Francisco.—p. 317.

Maine Medical Association Journal, Portland

16: 59-80 (April) 1925

Just a Little Bit of Detail. W. D. Thurber.—p. 64.
New England Health Institute. C. F. Kendall.—p. 67.
Pneumonia as Communicable Disease. A. G. Young, Augusta.—p. 72.
Health Work in Schools. A. O. Thomas.—p. 73.

Medical Journal and Record, New York

121: 453-520 (April 15) 1925

Important Ophthalmic Signs in Diseases of Nervous System. J. P. de River, San Francisco.—p. 453.
Diagnosis of Acute Conditions of Brain. J. V. Haberman, New York.—p. 456.
Correct Conception of Thoracic Empyema and Its Rational Physiological Treatment. A. L. Soresi, New York.—p. 460.
*Treatment of Severe Metabolic Arthritis. S. A. Twinch, Newark, N. J.—p. 466.
*Death Following Intravenous Injection of Distilled Water in Mistake for Saline Solution. W. W. Babcock, Philadelphia.—p. 469.
Efficient Method of Hemostasis Without Suture. G. E. Ward, Baltimore.—p. 470.
Problem of Gastric Cancer. S. Wendkos, Philadelphia.—p. 471.
Visualization of Gallbladder with Sodium Tetrabromphenolphthalein by Oral or Intraduodenal Administration Through Duodenal Tube. I. O. Palefski, New York.—p. 474.
Tryparsamide in Neurosyphilis. H. P. Hyder, Washington, D. C.—p. 475.
Basis and Development of Systematic Respiratory Therapy. L. Hofbauer, Vienna, Austria.—p. 477.
Rheumatism in Infancy. E. Pritchard, London.—p. 479.
*Purulent Pericarditis in Childhood. A. C. Wood and W. N. Bradley, Philadelphia.—p. 480.

Atypical Influenza in Children. M. Schuman, New York.—p. 484.
Roentgen-Ray Studies and Treatment of Enlarged Thymus in Children. C. W. Perkins, New York.—p. 487.
Meningococcus Meningitis in Young Children. H. M. M. Mackay, London.—p. 490.
Case of Vascular Nevus in Infant Treated with Radium. A. W. Jacobs, New York.—p. 494.

Atonic Colon as Cause of Arthritis.—Twinch calls attention to the atonic colon and terminal ileum as a large cause of that type of ill health which conduces to arthritis. Since he has had recourse to colonic irrigations, properly administered, together with systemic treatment, his recoveries have been far more frequent than under the old system of looking for and cleaning out suppurating foci.

Death Following Intravenous Injection of Distilled Water.—Babcock ordered an intravenous injection of a physiologic solution of saline containing epinephrin for a patient who had a weak pulse during an abdominal operation. After 125 mils of the solution had entered a vein in the arm, convulsive respiratory movements developed, and the patient ceased breathing and became pulseless. The heart did not respond to massage through the open abdominal wound and through a needle introduced into the heart bits of soft clot were aspirated. After the injection of forty minims of 1 : 1,000 epinephrin solution into the heart, and additional cardiac massage, feeble, but rather slow, contractions were resumed for a few minutes only, and further cardiac massage and the additional injection of about 100 minims of epinephrin solution and 30 minims of digalen directly into the left ventricle produced no response. In the meantime, 550 mils of the supposed saline solution with epinephrin had entered the veins, and on incising the external jugular vein and compressing the heart, watery, red blood and small, soft clots were expelled. A chemical examination of the saline solution employed showed no trace of chlorids. Distilled water had been injected by mistake.

Michigan State Medical Society Journal, Grand Rapids

24: 231-274 (May) 1925

Physiology and Pathology of Blood in Relation to Surgery. W. J. Mayo, Rochester, Minn.—p. 231.
Hypertension. J. L. Chester, Detroit.—p. 237.
*Congenital Atresia of Duodenum: Case. H. L. French, Lansing.—p. 240.
*Surgical Significance of Acute Glandular Fever. E. C. Baumgarten, Detroit.—p. 243.
*Paroxysmal Auricular Fibrillation and Cardiac Syncope. N. E. Clarke, Detroit.—p. 245.
Treatment (Diathermy) of Acute Epididymitis. G. C. Burr, Detroit.—p. 247.

Congenital Atresia of Duodenum.—In French's case a tentative diagnosis of hemorrhagic disease of the new-born was made with gastro-intestinal and probably intracranial hemmorrhage. The baby died on the fifth day. An enormously dilated stomach filled the entire left upper abdomen and part of the right side. The esophagus was slightly dilated near the cardia, but above that was normal. The small and large intestines were collapsed to the point of being ribbon-like and on opening them, a bile stained mucosa was the only thing found. The pyloric ring was dilated to the width of 3 cm. The duodenum was also markedly dilated, being 6 cm. at its widest portion. It passed up and back for 5.5 cm. beyond the pyloric ring and ended in a blind pouch. The distal portion of the duodenum was located with some difficulty and was found to be collapsed and also to end in a blind pouch. There was no connection between the two portions, either by fibrous band or otherwise.

Acute Glandular Fever and Appendicitis.—Baumgarten suggests, that before making a diagnosis of acute appendicitis, especially in children, it be remembered that in acute glandular fever is often encountered another of the many pitfalls in the maze of the right lower quadrant.

Cardiac Syncope Caused by Auricular Fibrillation.—The various cardiovascular causes of syncope are briefly stated and discussed by Clarke. Three cases are presented in which syncope appeared to be due to the onset of paroxysmal auricular fibrillation. The importance of recognizing the sudden onset of auricular fibrillation as a cause of sudden unconsciousness is emphasized.

Minnesota Medicine, St. Paul

3: 275-348 (May) 1925

Ramisection. A. W. Adson, Rochester.—p. 275.
*Visual Field Changes in Normal Pregnancy. W. R. Murray, Minneapolis.—p. 277.
Hormone of Parathyroid; Changes in Blood Serum Calcium of Thyroparathyroidectomized Dogs Modified by Bovine Hydrochloric X. A. M. Hanson, Faribault.—p. 283.
Active Immunity in Scarlet Fever. E. S. Platou, Minneapolis.—p. 285.
Diathermy in Vascular Circulatory Disturbances and Arthritis. A. E. Flagstad, St. Paul.—p. 288.
Progress of Cardiology During 1924. F. A. Willius, Rochester.—p. 293.
Etiologic Factors and Diagnostic Points in Some Abdominal Troubles. W. R. Bagley, Duluth.—p. 298.
Relation of Dog to Public Health. M. Joannides, Minneapolis.—p. 302.
Blood Pressures During Pregnancy, Labor and Puerperium. E. J. Simons and C. C. Rasmussen, Minneapolis.—p. 303.

Visual Field in Normal Pregnancy.—The visual fields of twenty cases of normal pregnancy were studied by Murray. In all cases visual acuity was normal; ophthalmoscopic examinations were negative; physical examination, blood pressures, blood tests and urinalyses were negative; and there were neither subjective symptoms nor objective findings that indicated a toxemia. Contraction of the visual fields occurs during the later months of normal pregnancy and is most marked on the temporal side. The degree of contraction varies from a moderate or slight temporal contraction to one in which the entire periphery of the form field may lie within 10 degrees of the point of fixation. In some cases, marked sector defects occur in the periphery of the white and color fields. The color fields show a reversal or interlacing in a very large proportion of cases. Following parturition, the visual fields slowly return to normal and some cases show marked limitation of the fields as late as twenty-two weeks postpartum.

Missouri State Medical Association Journal, St. Louis

22: 165-202 (May) 1925

Dental Infection and Systemic Disease. R. L. Haden, Kansas City.—p. 165.
Female Urethra. H. M. Young, St. Louis.—p. 169.
*Thrombo-Angiitis Obliterans. T. G. Orr, Kansas City.—p. 174.
*Postoperative Gallbladder Syndrome. C. Potter, St. Joseph.—p. 175.
Comparative Study of Wassermann and Kahn Tests in 1400 Cases. J. C. Willett, St. Louis.—p. 177.
Modern Developments in Medicine. I. J. Wolf, Kansas City.—p. 179.
*Late Cutaneous Syphilis in Tabetic. G. V. Stryker, St. Louis.—p. 181.

Thrombo-Angiitis Obliterans.—Six cases are reported by Orr. All of the six presented the typical history, signs and symptoms of thrombo-angiitis obliterans. The patients all had definite focal infection in the mouth. Their ages ranged from 36 to 48 years. None of them were Jews. They were all born in the United States. The duration of the disease varied from fourteen months to sixteen years, and the period of complete disability varied from one month to four years, with an average of twenty-two months. One of the patients, who had very mild symptoms, is doing very well after two and one-half years without any apparent advance in the disease. The other five patients have had amputations below the knee with sound healing in two cases, reamputation in one case, and two now have unhealed stumps that will require reamputation.

Postoperative Gallbladder Syndrome.—Potter discusses a syndrome that he has observed in six cases, three following cholecystectomy, two following cholecystostomy and one following a cholecystostomy, a later cholecystectomy and a still later operation for adhesions. He says that the symptoms usually arise from one month to four years after the gallbladder operation, usually earlier and more pronounced after cholecystectomy. The first attack often comes after a hearty meal or another hearty meal following about six hours after the first. There is nausea, often vomiting, high gastric distension, dyspnea and often cardiac distress due to the upward pressure of the distended stomach against the diaphragm. Hiccup is not uncommon. There is no jaundice or clay colored stools to indicate common duct obstruction. Colon irrigations give no relief. Gastric lavage gives almost instant relief and is usually returned with large amounts of residual food which may or may not contain varying amounts of bile. Heat and stupes are often beneficial but are unnecessary if the stomach is lavaged. A duodenum plastered to the left-in

gallbladder, gallbladder fossa or liver was found in all cases. Those patients with the worst symptoms had had cholecystectomy and the duodenum had completely plastered itself to the gallbladder fossa underneath the shelving edge of the liver. The duodenum had formed a kink or knuckle at this site and the pathology varied from adhesions to what amounted to a duodenal volvulus with corresponding aggravated symptoms. The usual treatment is of no avail in these cases. By doing a posterior gastro-enterostomy in five of these cases they have obtained absolute relief. The adhesions were not divided and, unless a previously left-in gallbladder appeared pathologic, it was not disturbed. Potter says that by adopting this method in cases presenting the above described syndrome practically all of them can be cured.

Late Cutaneous Syphilis in Tabetic.—Stryker reports the case of a man who for a period of sixteen years had had a constant succession of ulcers. The old ones healed spontaneously, leaving scars. New ones appeared. He suffered with severe lightning pains. Tabes dorsalis was diagnosed in 1908 and these ulcers had been appearing since then.

New Orleans Medical and Surgical Journal

77: 457-504 (May) 1925

*Version Versus Forceps. L. A. Ledoux, New Orleans.—p. 457.
*Value of Diathermy to General Surgeon. H. W. E. Walther and C. L. Peacock.—p. 460.
Mastoid as Problem of General Practitioner. E. Whittaker, Baton Rouge, La.—p. 464.
Heart Disease. G. C. Kilpatrick, Mobile, Ala.—p. 465.
*Interruption of Pregnancy by Cesarean Section with Sterilization of Tubes. E. M. Frommer, St. Joseph, Mo.—p. 468.
Treatment of Amebic Dysentery with Stovarsol. F. M. Johns and S. C. Jamison, New Orleans.—p. 469.
Human Myiasis Due to Ox Bot Fly Larvae (Hypoderma Lineata). J. A. Lanford and C. M. Warner, New Orleans.—p. 473.
Congenital Hypertrophic Pyloric Stenosis; Cases. T. B. Selkirs, New Orleans.—p. 475.
Glucose and Insulin in Treatment of Shock. W. E. Levy and H. Macheca, New Orleans.—p. 478.
Feeding Problems of First Month. C. J. Bloom, New Orleans.—p. 480.

Version Versus Forceps.—Experience has convinced Ledoux that version should be substituted for high forceps and used in many midforceps indications. It should be done early, not simply as an emergency or operation of last resort. The routine termination of labor at the end of the first stage with version, is a practice that should be discouraged. While the danger to the mother may be slightly greater with version, when properly performed it will be more satisfactory from the maternal and fetal viewpoint, not only in respect to the immediate results, but as regards the eventful welfare of both.

Diathermy in Surgery.—Walther and Peacock are convinced that surgical diathermy offers to the general surgeon a valuable adjunct in the treatment of many surgical conditions refractory to the usual means of treatment heretofore employed.

Sterilization After Cesarean Section.—Frommer performs the sterilization as follows: after picking up the tube with a clamp he squeezes a loop of the tube and in the furrow formed by this procedure a catgut ligature is made. The tip of this loop is then cauterized. The advantage of this method is said to be that the annexes are not rooted up (this is very desirable in cases of chronic and subacute inflammation) and the entire act may be accomplished in a few minutes. Frommer has performed this operation in eight cases of well advanced pulmonary tuberculosis, in four cases of mitral stenosis (decompensation) and in two cases of chronic nephritis.

Ohio State Medical Journal, Columbus

21: 305-384 (May 1) 1925

Rationale of Gallbladder Therapeusis. D. W. Palmer, Cincinnati.—p. 309.
*Outbreak of Food Infection; Isolation of Paratyphoid Group Organisms from Infected Material. E. Megrail and A. M. Smith, Jr., Cleveland.—p. 314.
Chronic Diarrhea. W. Teachnor, Columbus.—p. 315.
Tendon-to-Tendon Approximation in Halsted Type of Hernial Repair: Elimination of Tension. E. Holman, Cleveland.—p. 321.
Malarial Parasitic Treatment of General Paralysis. F. L. Rhodes, Massillon.—p. 323.

Food Infection; Bacillus Paratyphosus.—In the epidemic reported on by Megrail and Smith tapioca pudding was the source of the infection. From a specimen taken from the center of a chunk of the pudding and from specimens of feces obtained from two persons, organisms of the *B. paratyphosus* beta group were isolated. An intravenous injection into a rabbit of a filtrate of these organisms caused dyspnea, paresis and death of the animal. This filtrate proved to be thermostabile.

Philippine Islands Medical Association Journal, Manila

5: 37-74 (February) 1925

*Hepatic Cirrhosis in Philippines. A. G. Sison, A. B. Sison and W. de Leon.—p. 37.
*Leprosy Treatment at Culion Leper Colony. J. Rodriguez.—p. 40.
Cerebral Forms of Influenza; Cases. P. N. Villadenor, Manila.—p. 46.
*Treatment of Leprosy at San Lazaro Hospital, 1920-1924. C. Gavino and S. Tietze.—p. 50.

Hepatic Cirrhosis in Philippines.—The clinical records of 169 cases have been collected by Sison et al. out of 31,388 medical cases, while 152 necropsy cases have been collected. The portal form of cirrhosis was the most common, and alcohol and malaria were frequent causes. Cirrhosis is less common in the Philippines than in countries where alcohol is more commonly and heavily used. The incidence is 1.68 per cent.

Leprosy Treatment at Culion.—Of the total of 2,810 patients receiving antileprotic treatment at the Culion Leper Colony during the semester ending March, 1924, 9.2 per cent. were clinically and bacteriologically negative; 62.5 per cent. were improved; 15.6 per cent. remained stationary; and 12.6 per cent. became worse. The main preparations used in Culion are: (1) Ethyl esters with 0.5 per cent. iodin; (2) ethyl esters with 10 per cent. creosote; (3) ethyl esters with 0.5 per cent. iodin and 10 per cent. creosote; and (4) Mercado mixture (combination of chaulmoogra oil and resorcin). Of these drugs, the iodized ethyl esters of chaulmoogra oil give the best results. The value of creosote as an addative to the chaulmoogra ethyl esters remains to be established definitely. Improvement under the Mercado mixture is rather slow but this preparation occupies a definite place in the treatment of leprosy. With the possible exception of the pure chaulmoogra oil, it is the only drug available that can be given with some degree of safety when nephritis is present as a complication. The plain ethyl esters have been discarded, having been found too iritating locally. Twenty-five per cent. of patients under routine treatment developed one or more lepra reactions during the semester covered by this report. The results obtained in this group were not, as a rule, as favorable as those shown in patients who had no reaction.

Treatment of Leprosy at San Lazaro.—Of various treatments tried at San Lazaro by Gavino and Tietze the ethyl esters of chaulmoogra combined with 0.5 per cent. iodin gave the best and quickest results with the least possible local and constitutional reaction. Intramuscular injections were combined with small quantities of the same drug by oral administration. Five drops was the average dose given by mouth.

Public Health Journal, Toronto

16: 151-196 (April) 1925

Health Work in Saskatchewan. M. M. Seymour.—p. 151.
License Inspectors. T. G. Hamilton.—p. 164.
Notification of Communicable Disease. A. C. Jost.—p. 166.
Greatest Public Health Need of Canada. J. W. S. McCullough.—p. 171.

Radiology, St. Paul

4: 265-354 (April) 1925

*Pleuropneumonitis Following Roentgen-Ray Treatment, and Diffuse Metastasis to Lungs from Cancer of Breast. A. U. Desjardins, Rochester, Minn.—p. 265.
Radiographic Findings in Hepatic Abscess, Amebic in Type. J. C. Dickinson, Tampa, Fla.—p. 273.
*Light Sensitiveness. W. W. Duke, Kansas City, Mo.—p. 279.
Treatment of Tuberculosis of Female Genitalia with Light and Roentgen Rays. H. Schmitz, Chicago.—p. 283.
Light Treatment in Medicine. A. Reyn, Copenhagen, Denmark.—p. 288.
Diverticula of Duodenum. A. Hartung, Chicago.—p. 308.
Epithelioma of Lip. W. H. Kennedy, Indianapolis.—p. 319.
Teaching of Radiology to Undergraduates. J. H. Dempster, Detroit.—p. 325.
Educating Practising Physician as to Value of Radiology. H. Swanberg, Quincy, Ill.—p. 327.

Recurrence of Vesical Calculus. C. H. deWitt, Valparaiso, Ind.—p. 332.
Advanced Trouble Shooting. C. B. Horsley, Pittsburgh.—p. 333.
Radioactive Substances; Therapeutic Uses and Applications. J. Muir, New York.—p. 334.
Radiographic Diagnosis of Periapical Dental Infection in Light of Bacteriologic Findings. R. L. Haden, Kansas City, Mo.—p. 337.

Pleuropneumonitis Following Radiotherapy.—Desjardins is convinced that in a small percentage of cases in which the thorax is subjected to roentgen-ray treatment, definite inflammatory phenomena follow. This has been observed not only in cases of cancer of the breast, but also in a few cases of quite different conditions.

Light Sensitiveness.—Duke reports on five patients who were excessively sensitive to the action of light. In three instances, a typical attack of nasal allergy, with symptoms such as the swelling of the mucous membrane of the nose, sneezing and profuse watery secretion, would invariably follow exposure of the retina to the action of sunlight. In other words, the reaction appeared whenever the patient looked at the sun or reflected sunlight. Such symptoms appeared also after the patient looked steadily for a few moments at a thousand watt nitrogen lamp or a mercury vapor quartz light. The reaction was apparently caused more quickly by visible light than by the quartz light. In one case, the patient would react with formation of a typical wheal (characterized by erythema, edema of the skin, and itching) which would appear invariably after a two and one-half minute exposure of the skin to afternoon sunlight. The reaction would cover the entire area of skin exposed to light but would not extend beyond this area. When large areas of skin were accidentally exposed, as happened on three occasions, the patient reacted not only with localized urticaria but with symptoms resembling allergic shock, that is, shock resembling that which is caused by an overdose of pollen.

Rhode Island Medical Journal, Providence

81:51-70 (April) 1925

Neurosurgery; Brain Injuries. W. Sharpe, New York.—p. 51.
Diagnosis of Tumors of Spinal Cord. C. A. McDonald, Providence.—p. 61.

Southern Medical Journal, Birmingham, Ala.

18:229-314 (April) 1925

Scarlet Fever. G. F. Dick and G. H. Dick, Chicago.—p. 229.
Management of Scarlet Fever. O. W. Hill, Knoxville, Tenn.—p. 237.
Scarlet Fever and Public Health. W. C. Rucker, New Orleans.—p. 239.
Cancer Problem: Treatment by Surgery and Radiation. T. A. Groover, Washington, D. C.—p. 245.
Value of Roentgen Ray in Determining Conditions of Appendix. A. L. Gray, Richmond, Va.—p. 248.
*Emotional Conflict in Child and Its Functional and Symptomatic Results. B. S. Veeder, St. Louis.—p. 254.
*Determination of Possible Psychotic Trends in Adolescence by Modified Circulatory Rating Test. P. J. Trentzsch, Washington, D. C.—p. 258.
*Blood Transfusion in Malnutrition in Infancy. A. S. Root, Raleigh, N. C.—p. 263.
Unification of Milk Control by State Health Departments. L. C. Frank, Montgomery, Ala.—p. 267.
Bone Tumors. B. Brooks, St. Louis.—p. 274.
*Separate Kidney Function: Comparative Value of Dye Excretion (Phenolsulphonephthalein) and Salt Excretion (Specific Gravity) as Tests of Differential Kidney Function. L. C. Todd and A. J. Crowell, Charlotte, N. C.—p. 282.
Surgery of Left Colon. F. W. Rankin, Lexington, Ky.—p. 287.
Radical Treatment of Hirschsprung's Disease. H. H. Kerr, Washington, D. C.—p. 290.
Cancer of Rectum. J. L. Jelks, Memphis, Tenn.—p. 295.
Ocular Neuroses. W. T. Davis, Washington, D. C.—p. 300.
Borderline Cases of Ophthalmology and Rhinology. L. M. Francis, Buffalo, N. Y.—p. 305.

Emotional Conflict in Child.—Veeder suggests that some emotional conflict may be the underlying basis of malnutrition in children. Other conditions, such as persistent enuresis, some type of vomiting, speech defects, etc., might frequently be a background of emotional conflict and other emotional conflicts. Fainting, increase in heart rate, congestion, shrinking, nausea and many other physical phenomena are common reactions to emotions. The practical importance of child psychology in the field of pediatrics is emphasized.

Cardiovascular Rating Test.—A cardiovascular rating test was worked out by Trentzsch on a large group of aviators for the purpose of eliminating unstable fliers. The data obtained indicated that certain types of mental disease showed a low rating. In a group of 601 necropsies certain types of mental disease showed small aplastic hearts and also an incomplete development of the capillary system. The test was revised and applied to 100 adolescent school children. Eighty-five rated 10 points or above, while fifteen rated below 10 points. Out of the 100 children rated by the author's revised circulatory test twenty-six pupils were in the advanced class; four of these rated below 10 points, or an average of 15.3 per cent. Forty-six pupils were in the middle class. Four of these rated below 10 points, or an average of 8.9 per cent. While twenty-nine pupils were in the retarded class seven of these rated below 10 points, making an average in this group of 24.4 per cent., thus showing that the more or less stable middle group had the smallest average of pupils rating below 10 points. All of these pupils presented some problems to the teachers, and the histories obtained from the teachers and the children showed many neurotic symptoms.

Blood Transfusion in Malnutrition.—In forty-nine of the fifty cases reported on by Root the superior longitudinal sinus route was utilized, and in all cases the blood was citrated. Of the fifty cases studied, eight, or 16 per cent., showed a reaction following transfusion. In one of these cases there was some agglutination of donor's and recipient's red blood cells, but the transfusion was performed as an emergency measure and as a result there was a violent reaction. In the other six cases, the temperature was elevated approximately 2 degrees for from four to eight hours, but with no other symptoms.

Testing Separate Kidney Function.—A comparison of the value of the phenolsulphonephthalein excretion and specific gravity as tests of separate kidney function was made by Todd and Crowell by the coincident use of both in 131 clinical cases. The two tests run closely parallel. A simple method of determining the specific gravity of small specimens (3 mils) is advocated as practical for this purpose. The similar specific gravity test is preferable because it is less trying on the patient, is time saving to the urologist while at the same time it gives as much information as the other.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

68:1-152 (March) 1925

Lipoids in Neurosic Degeneration and in Amaurotic Family Idiocy. E. W. Hurst.—p. 1.
*Circulation of Blood in Cerebral Cortex. H. Florey.—p. 43.
Astereognosis. G. Campora.—p. 65.
*Respiratory Disorders in Epidemic Encephalitis. W. A. Turner and M. Critchley.—p. 72.
*Increased Intracranial Pressure in Cerebral Tumor. W. R. Brain.—p. 105.

Circulation of Blood in Cerebral Cortex.—The results recorded by Florey, from the stimulation of the stellate ganglion and the vasomotor center itself, produced no evidence of any vasomotor function for these nerves.

Respiratory Disorders in Epidemic Encephalitis.—An outline is given by Turner and Critchley of the literature dealing with respiratory disturbances associated with epidemic encephalitis, and seven illustrative cases are described in detail. The theories of bulbar, thalamic and peripheral origins are discussed; these hypotheses, however, fail to explain all the known facts and are obviously inadequate. Emphasis is placed on the frequent association of respiratory derangements with disorders of sleep and of conduct. The influence of sleep and of the emotions on the breathing is very marked, and in the majority of cases a temporary inhibition of the disorder can be produced by voluntary effort. It is probable, therefore, that the pathogenesis of these phenomena lies in a derangement of the involuntary psychomotor control of respiration, which is maintained by various corticopontine pathways, capable of anatomic demonstration. The lesion, therefore, is placed at a level higher than the so-called respiratory "centers."

Increased Intracranial Pressure in Brain Tumor.—Brain analyzes the signs and symptoms of increased intracranial pressure manifested by a series of sixty cases of cerebral

tumor. In twenty-four cases the precise situation and extent of the tumor was ascertained at necropsy, in fourteen other cases the site of the tumor was verified during operation, but in the absence of necropsy its extent could not be estimated accurately. In the remaining twenty-two cases there was no necropsy, and operation, if performed, gave no reliable information as to the site of the tumor. Of this series of sixty cases, headache was present in all except seven. Papilledema or secondary optic atrophy was present in forty-five cases. Primary optic atrophy was present in two cases, both pituitary tumors: while in thirteen cases the fundi were normal.

British Journal of Anesthesia, Manchester

2: 157-200 (April) 1925

Influence of Anesthesia on Results of Major Abdominal Operations. H. Finsterer.—p. 159.
Alleged Inconveniences of Local Anesthesia with Novocain. R. Riccio and F. B. la Rosa.—p. 175.
Acetylene-Oxygen Anesthesia. A. Goldman and J. D. Goldman.—p. 181.

British Journal of Dermatology and Syphilis, London

37: 213-258 (May) 1925

*Fractional Method of Gastric Analysis in Diseases of Skin. W. H. Brown.—p. 213.
Case of Acute Primary Lupus Erythematosus. G. Pernet.—p. 227.
Fatal Case of Lupus Erythematosus, with Necropsy. R. Gibson.—p. 232.
Case of Keratodermia Blennorrhagica. E. A. Smith.—p. 234.

Value of Gastric Analysis in Skin Diseases.—Fractional examination of gastric analysis has been found by Brown to be a clinical method of decided value in the investigation of dermatologic conditions. Hypochlorhydria, for instance, is a prevailing condition in rosacea, and hyperchlorhydria is the prevailing condition in acute widespread dermatoses.

British Journal of Ophthalmology, London

9: 209-256 (May) 1925

Relationship Between Subarachnoid and Intra-Ocular Hemorrhage. G. Riddoch and C. Goulden.—p. 209.
Centripetal Fan Scotoma in Glaucoma. D. P. Smith, Birmingham.—p. 233.
Ocular Injury Caused by Liquid Ammonia. I. Abramovicz.—p. 241.

British Journal of Surgery, Bristol

12: 625-839 (April) 1925

XVI. Whitehead's Operations. D'Arcy Power.—p. 625.
Carcinoma of Breast. R. Johnson.—p. 630.
*Method of Spread of Breast Carcinoma, Embolism or Permeation. D. C. L. Fitzwilliams.—p. 650.
Fat Necrosis of Breast: Case. G. Keynes.—p. 663.
*Gastric Ulcer and Gastric Carcinoma. J. H. Dible.—p. 666.
Surgical Treatment of Cardiospasm. A. J. Walton.—p. 701.
*Abdominal Torsion of Omentum. E. Cowell.—p. 738.
Infections of Alimentary Tract. W. H. Ogilvie.—p. 752.

Spread of Breast Cancer.—Fitzwilliams favors the view of spread of breast carcinoma by embolism through lymph channels. He presents the evidence on which his views are based.

Gastric Ulcer and Gastric Cancer.—In all of the cases reviewed by Dible in which the clinical facts and macroscopic appearances have led to a diagnosis of gastric ulcer a simple and innocent type of ulcer has been present. Malignant changes have not been found. Further evidence of an indirect nature has been adduced which is against the likelihood of a large proportion of excised ulcers showing malignant changes. As a result of examining thirty-three cases of carcinoma in which the lesions were sufficiently early to afford results capable of interpretation for the purpose of this inquiry, in nineteen no evidence was found which was in any way suggestive of preexisting ulceration, and in nine the weight of the evidence was against any causal association of chronic ulcer with carcinoma.

Abdominal Torsion of Omentum.—Eighteen cases of pure intra-abdominal torsion of the omentum are considered by Cowell. The patient, either male or female, at the period of young middle age and having tendency to stoutness, is seized with sudden abdominal pain. The pain is not too severe at the onset, and is generalized in the upper abdomen. Later it becomes emphasized and located to the right abdomen from costal margin to iliac fossa. Vomiting may occur, but is not a feature. The action of the bowels gives no useful information. The abdomen is generally slightly distended, does not move well, and shows some rigidity of the right rectus. Percussion is dull anteriorly and in many cases an ill-defined "doughy" mass can be made out. This is usually taken for an appendix abscess, but the gravity of the patient's condition and the size of the mass are out of proportion to the duration of illness.

British Medical Journal, London

1: 765-812 (April 25) 1925

*Some Forms of Vomiting in Infancy. H. C. Cameron.—p. 765.
Puerperal Sepsis in Wales. E. Macleau.—p. 770.
*Clinical and Bacteriologic Investigation of Puerperal Fever. G. Fitzgibbon and J. W. Bigger.—p. 773.
*Etiology of Puerperal Fever. J. W. Bigger and G. Fitzgibbon.—p. 775.
*Blood Coagulation Time in Insane. J. R. Forrest.—p. 777.
Tracheotomy Tube Worn for Over Seventy Years. S. C. Thomson.—p. 778.
Acute Cholecystitis at Age of Three. J. R. Hamerton.—p. 778.
Torsion of Fallopian Tubes. L. Rogers.—p. 778.

Vomiting in Pregnancy.—Vomiting due to obstruction from cussed by Cameron. He includes duodenal, pyloric and esophageal obstruction.

Observations on Puerperal Fever.—Among fifty-seven cases of acute puerperal fever considered by Fitzgibbon and Bigger there were twenty-nine deaths. Fifteen cases developed among patients wholly treated in the hospital and nine died; twenty-five developed in the hospital district and seven died; seventeen were patients sent into hospital either late in labor with complications, or after delivery with fever, having been previously treated but not in the hospital district, and of these cases thirteen died. During four years, 14,380 confinements were attended at the Rotunda Hospital, 6,810 in the hospital and 7,570 in the hospital district—and of these forty appear as acute puerperal sepsis, with sixteen deaths; this gives an incidence of infection of 2.8 per thousand and a mortality of 1.1 per thousand. Of the hospital cases, twenty-five were spontaneous deliveries, two were simple low forceps, and one a breech; of these twenty-eight cases, eight died. Two cases were first seen after complete abortions, and both died. Of the remaining ten cases, Cesarean section was performed in two and pubiotomy in one, secondary postpartum hemorrhage occurred in one, and in six manual removal of the placenta was practiced; of these, six died.

Bacteriology of Puerperal Fever.—Streptococci were found in the vagina before and after delivery in 68 per cent. of the fifty cases examined by Bigger and Fitzgibbon. Hemolytic streptococci were only found twice in the examination of 108 vaginal swabs. *Streptococcus pyogenes* was never found. The predominant nonhemolytic streptococci of the vagina were *S. faecalis* and *S. mitis.* Nonhemolytic streptococci were present in the postpartum uterus in at least 20 per cent. of the cases examined.

Blood Coagulation Time in Insane.—Of the 117 cases reported on by Forrest sixty-three gave coagulation times over the normal in sane patients. Of ten cases of hematoma auris, seven gave coagulation times above the normal. In nineteen cases the time was six minutes, and eleven of these were cases of mania. On the other hand, fourteen cases gave a time under four minutes, and ten of these were cases of dementia.

1: 813-868 (May 2) 1925

Specific Action of Drugs in Tuberculosis. W. E. Dixon.—p. 813.
Some Forms of Vomiting in Infancy. H. C. Cameron.—p. 815.
Effect of Antisyphilitic Treatment, as Gauged by Sigma Reaction. P. H. Jones.—p. 821.
*Carcinoma of Rectum Complicated by Pregnancy. R. C. B. Maunsell.—p. 826.
*Hemolytic Streptococcal Infection: Recovery. A. F. Cole.—p. 827.
Fatal Injury of Vagina. H. Blair.—p. 828.
Bullet Embedded in Tongue. P. K. Liang, C. H. Lei and P. T. Liang.—p. 829.
Cystic Hygroma of Chest. H. V. Ingram.—p. 829.
Post-Mortem Cesarean Section: Living Child. H. G. Roberts.—p. 829.
Treatment of Syphilis Throughout Pregnancy. R. Forgan.—p. 829.

Operative Treatment of Rectal Cancer.—In the treatment of carcinoma of the rectum in general, Maunsell sometimes

uses the combined method, and more often the perineal, with removal of the coccyx and the last segment of the sacrum, a thorough exploration and a colostomy opening having been made some days previously.

Hemolytic Streptococcal Infection.—In the case reported by Cole, the patient overcame a very severe infection by a hemolytic streptococcus, twice isolated in almost pure culture—first from a dental root abscess, then from the mastoid discharge. The infected tooth had given no trouble, and a dentist had considered it healthy. Nevertheless after its extraction the patient began to improve. Treatment consisted largely of the administration of autogenous vaccines.

2: 869-908 (May 9) 1925

Sleep and Sleeplessness. C. P. Symonds.—p. 869.
*Vomiting in Infancy. III. H. C. Campbell.—p. 872.
Treatment of Inoperable Carcinoma of Cervix Uteri with Radium. M. Donaldson.—p. 876.
Radium Treatment of Inoperable Carcinoma of Cervix. G. I. Strachan.—p. 879.
*Application of Ultraviolet Light in General Practice. T. C. McKenzie.—p. 880.
Accentuation of "Mitral Murmur" by Temporary Toxemic Condition (Accompanied by Temporary Nystagmus). G. A. Stephens.—p. 881.
Gallstones in Girl Aged Thirteen: Cholecystotomy, Removal of Four Stones: Recovery. C. M. Kennedy.—p. 882.
Ultraviolet Therapy. F. Talbot.—p. 883.
Jejunal Ulcer. W. S. Wildman.—p. 883.

Treatment of Vomiting in Infancy.—In the treatment of habitual vomiting of infants, the most uniform success has been achieved by thickening the child's food to the consistency of a thick gruel, as for instance, farina boiled with milk until it was thick enough to adhere to an inverted spoon. In infants after the seventh or eighth month it is often sufficient to anticipate by a month or two the change to a mixed diet and to feed them as the normal child would be fed at the beginning of the second year. Rumination, like aerophagy, like the vomiting due to idiosyncrasy for cow's milk, and like the vomiting of nervous unrest, is found most commonly among infants of psychopathic inheritance and in a psychopathic environment. Isolation, handling by a competent self-confident nurse, the reduction of emotional disturbance to a minimum, are all of the greatest importance if recovery is to follow.

Ultraviolet Light Therapy.—McKenzie has used ultraviolet successfully in the treatment of ulcers, eczema, alopecia areata, sycosis, lupus, burns, psoriasis, sciatica, local tuberculous conditions, chorea, rickets and rheumatism. McKenzie emphasizes the fact that ultraviolet light is by no means a panacea for all ailments, and in some of the diseases it simply replaces a more painful and cumbersome method by a pleasant and easily applied remedy. Furthermore, it appears to act on the general metabolism of the body—the appetite improves and the mental outlook brightens.

China Medical Journal, Shanghai

39: 287-382 (April) 1925

Epidemiology of Clonorchis Infection in China. E. C. Faust.—p. 287.
Maxillary Sinusitis. W. S. Thacker-Neville.—p. 296.
Symblepharon. R. A. Peterson.—p. 309.
Chemical Analysis and Physiologic Properties of Fuh-Ling (Indian Bread of Tuckahoe). B. E. Read and S. Y. Wong.—p. 314.
Antimony Treatment of Schistosomiasis Japonica. C. U. Lee.—p. 321.
Bacteriology of Ear Infections. A. M. Dunlap.—p. 331.

Indian Medical Record, Calcutta

65: 97-128 (April) 1925

Venereal Problem in Calcutta. S. N. Sinha.—p. 97.
Dietetic Treatment of Diabetes. S. K. Mukherji.—p. 100.
Analysis of Two Latest Cholera Treatments. S. N. Chattarjee.—p. 107.
Dangers of Metal and Glazed Earthenware Cooking Utensils. S. N. De.—p. 108.
Postoperative Psychosis. A. Jajjnik.—p. 109.

International Journal of Psycho-Analysis, London

6: 109-245 (April) 1925

Mother Right and Sexual Ignorance of Savages. E. Jones.—p. 109.
Oral Character Formation. E. Glover.—p. 131.
Psycho-Analytic Method of Observation. T. Schroeder.—p. 155.
Unconscious Factors in International Language Movement with Especial Reference to Esperanto. J. C. Flügel.—p. 171.
Phallic Significance of Tongue and Speech. J. C. Flügel.—p. 209.

Japan Medical World, Tokyo

5: 83-118 (April 15) 1925

*Nonprotein Nitrogen in Blood of Human Beriberi and Avitaminosis of Rabbits. S. Kozawa, M. Kusunoki and N. Hosoda.—p. 83.
*Immunologic Studies of Serum Proteins; Neutralizing Process of Precipitins in Vivo. T. Oguchi and K. Hamano.—p. 86.
*Influences on Blood Pressure by Volume of Air, Number of Respirations and Deep Breathings in Artificial Respiration. U. Hasegawa.—p. 99.

Azotemia in Beriberi.—Azotemia was found by Kozawa, Kusunoki and Hosoda both in the blood of avitaminous rabbits and human beriberi patients.

Prevention of Nonspecific Reactions in Precipitin Tests.—Oguchi and Hamano assert that in order to prevent nonspecific reactions in precipitin tests, the immune serum should be heated at 56 C. for thirty minutes and the results should be read more than three hours afterward in the ring test.

Influence of Blood Pressure on Respiration.—Hasegawa says that in breast respiration there are only slight changes of pulse variation, but in abdominal respiration the pulse variation becomes small. There is also lowering of blood pressure. On the other hand, during expiration the blood pressure is raised. In the reverse type, the blood pressure is raised during the inspiration and lowered during the expiration.

Journal of Cancer, Dublin

2: 1-48 (April) 1925

Deep Roentgen-Ray Therapy. W. Pilgeer.—p. 1.
Glover Micro-organism as Specific Cause of Carcinoma. J. Loudon.—p. 15.
Clinical Evidence in Favor of Extrinsic Origin of Cancer. W. B. Coley.—p. 26.

Journal of Hygiene, London

23: 347-448 (April) 1925

*Melioidosis; Relation to Glanders. A. T. Stanton and W. Fletcher.—p. 23.
Use of Thermostable Opsonins (Bacteriotropins) in Elucidation of Bacterial Infections. S. L. Cummins.—p. 364.
*Staphylococcal Precipitin Reactions in Acute and Chronic Infections and in Serum Sickness. L. S. Dudgeon and J. Bamforth.—p. 375.
*Infection with Coliform Bacilli as Cause of Rheumatoid Arthritis and Chronic Rheumatism: Treatment by Autogenous Vaccines. W. H. Kauntze.—p. 389.
Immunization and Selection as Factors in Herd Resistance. W. W. C. Topley, J. Wilson and R. R. Lewis.—p. 421.
Presence of Phenomena Akin to Absorption in Biology, as Source of Fallacy in Statistical Inquiry. J. Brownlee.—p. 437.

Melioidosis.—Stanton and Fletcher assert that *B. whitmori* is serologically almost identical with several strains of *B. mallei* but it differs from them by reason of its motility and the character of its growth on laboratory mediums. The causative organism of glanders is held to be not always one and the same bacillus. A group of organisms differing from each other in serologic properties has been included under the name *B. mallei*. *B. whitmori* is a member of this group, which has been found in rodents and in man.

Precipitin Reaction in Staphylococcus Infections.—Out of 118 cases of known *Stophylococcus aureus* infection studied by Dudgeon and Bamforth forty-three showed a strong or moderate precipitin reaction, twenty-two a weak reaction and fifty-three were negative. The percentage of positive results is higher than that found among cases in which there was no reason to believe that such an infection existed, for among this latter group of ninety-eight cases, forty-two were positive. When present, however, this reaction appears to be specific as it was not obtained with filtered antigens made under the same conditions from cultures of *B. coli*, *B. typhosus* and other organisms mentioned, except in the presence of coexisting infection. The blood of many normal rabbits gave a strong or moderate positive reaction with *S. aureus* antigens, but such reactions were found to vary in normal animals and were increased in strength as a result of inoculation of living cultures of *S. aureus*. Of 109 cases of serum sickness examined, 87.3 per cent. gave a positive reaction with *S. aureus* filtered antigen, and of these, 79.6 per cent. a well marked reaction. The reaction appears also to be specific in the sense that antigens prepared from other organisms in an exactly similar way are of no value. The reaction was not obtained with *S. aureus* grown without peptone and peptone alone showed no antigenic effect. The

phenomenon appears to be due to some interaction between the precipitin in the patient's serum and some body which *S. aureus* elaborates from the beef broth and peptone.

Preparation of Vaccine from Coliform Bacilli.—A technic is described by Kauntze for the preparation of a vaccine from coliform bacilli isolated from the feces of a patient and agglutinated by his blood serum. The encouraging results obtained in the treatment of a number of patients suffering from rheumatoid arthritis, chronic rheumatism, and allied diseases with an autogenous vaccine prepared by this technic, are reported. The absence of agglutinins for coliform bacilli from the blood of healthy persons is established, while it is shown that such agglutinins are present in high concentration in the group of diseases studied. A report is made on the result of attempts to classify the coliform bacilli by cultural and serological reactions. Suggestions are made as to the mechanism of infection with coliform bacilli, and as to the significance of variants in that group of organisms found in the feces.

Journal of Neurology and Psychopathology, London

5: 289-393 (Feb.) 1925

Organic Spinal Hemianesthesia Showing Persistence of Peculiar Form of Sensation and Occurrence of Phenomena of Alloesthesia and Heteresthesia. R. M. Stewart.—p. 289.
Operative Treatment of Gastric Crises. M. Critchley and J. M. Wolfsohn.—p. 318.
Treatment of Psychotic Patients in Institutions in Light of Psychoanalysis. M. R. Barkas.—p. 333.
Myotonia Atrophica (Dystrophia Myotonica). M. Keschner and B. Finesilver.—p. 341.

Journal of State Medicine, London

33: 201-250 (May) 1925

Age Distribution of Infectious Diseases with Reference to Scarlet Fever. E. L. Collis.—p. 201.
Health of Clerk. C. S. Thomson.—p. 230.

Lancet, London

1: 957-1010 (May 9) 1925

Rôle of Fats in Vital Phenomena. J. B. Leathes.—p. 957.
Technic of Suprapubic Prostatectomy. J. B. Hume.—p. 963.
Problem of Phlyctenular Child. L. H. Savin.—p. 965.
*Alleviation of Chronic Progressive Deafness by Zünd-Burguet Electrophonoide Method. G. C. Cathcart.—p. 968.
Successful Collapse of Lung by Artificial Pneumothorax in Advanced Fibroid Phthisis. C. H. C. Dalton.—p. 972.
*Secondary Sarcoma of Pancreas Causing Jaundice in Child. J. Crooks.—p. 973.

Use of Zünd-Burguet Electrophonoide in Deafness.—Cathcart asserts that his results in 100 cases show that this method of treatment, when properly carried out, affords the most substantial advance in the treatment of chronic progressive deafness of recent years, and that it deserves more serious consideration from otologists than it has hitherto received. Of the total number of cases, 68 per cent. have definitely improved after treatment. These comprise 81 per cent. of the cases of nerve deafness, 67 per cent. of the cases of chronic otitis media, and 55 per cent. of the cases of otosclerosis. As regards tinnitus, this treatment not only alleviates it but often causes it to disappear completely.

Secondary Sarcoma of Pancreas Causes Jaundice.—The primary tumor in Crooks' case was situated in the ovaries. The girl was 10 years of age. The pancreas was converted into a firm mass. A lymph gland at the root of the right lung and another at the bifurcation of the trachea both showed metastatic enlargement. The left orbit was packed with tumor growth, which pushed forward the eye and spread to the frontal bone, causing the swelling over the supraorbital ridge. Tumor growth was present in the right orbit. There were deposits of new growth over the anterior surface of the fourth and fifth dorsal vertebrae, on the internal aspect of the left ramus of the pubis, and on the outer surface of the calvarium. There was a recent extensive subdural hemorrhage over the vertex of the brain. Histologically very little gland tissue was found in the ovaries. It was replaced by sarcoma of the small round cell type. The blood vessels being ill formed, there was much hemorrhage. The pancreas was extensively invaded by sarcoma, small groups of acini being widely separated by masses of neoplasm. The thymus showed metastasis of the same type of growth, and the tissue of the lymph gland from the mediastinum was almost entirely replaced by it. Sections of the other tumor masses described also revealed small round-celled sarcoma, while those of the spleen, kidneys, to be healthy. An interesting point was that the liver showed definite early unilobular cirrhosis; the portal tracts were broadened, the small bile ducts contained bile casts, and in the liver cells were granules of bile pigment. There was no evidence of metastatic growth in the liver or lungs.

Medical Journal of Australia, Sydney

1: 359-388 (April 11) 1925

Mechanics of Respiration in Health and in Disease. C. G. McDonald.—p. 359.
Investigation of Reactions of Animal Tissues Exposed to Monochromatic Roentgen Rays of Different Wave Lengths. W. Moppett.—p. 364.

1: 389-416 (April 18) 1925

Symptoms of Some Forms of Intestinal Obstruction. J. L. McKelvey.—p. 389.
Some Aspects of Early Intestinal Obstruction. H. R. G. Poate.—p. 392.
Clinical Significance of Blood-Shot Eye. J. R. Anderson.—p. 396.

Annales des Maladies Vénériennes, Paris

20: 161-240 (March) 1925

Cyanotic Gummas and Syphilitic Ulcerations. H. Gougerot.—p. 161.
Cyanotic Syphilitic Ulcerations. H. Gougerot.—p. 171.
Discoloration of Skin After Arsphenamin. A. Boutelier.—p. 182.

20: 241-320 (April) 1925

*The Desmoulière Reaction in Syphilis. Gougerot and E. Peyre.—p. 241.
*Comparison of Serologic Tests for Syphilis. L. Pais.—p. 248.

Diagnostic Value of Desmoulière's Test.—Six hundred tests with Desmoulière's cholesterinized antigen were made by Gougerot and Peyre, using heated or unheated serum from 202 patients with manifest signs of syphilis. In 21 cases of primary syphilis the test was positive in 18, all after the twelfth day; in 76 cases of the secondary and tertiary stage it was always positive. In 76 patients with latent syphilis the test elicited a positive response in 90 per cent. and in congenital syphilis in 100 per cent. The positive reaction became negative after adequate treatment.

Comparative Study of Different Tests in Syphilis.—Pais reports the results of his numerous parallel tests in 500 syphilitic serums. The Sachs-Georgi reaction agreed with the Wassermann test in all cases of primary syphilis, and was more sensitive in the secondary and tertiary stage of the disease. The same concordance was manifest in affections of the nervous system and in latent syphilis. The Meinicke flocculation reaction is unquestionably specific. The Bruck flocculation test is less specific than the Wassermann, Meinicke and Sachs-Georgi tests. Dold's turbidity reaction is less specific than the Wassermann test. The Meinicke turbidity reaction appears earlier in primary syphilis than the Wassermann and other flocculation reactions. It is constantly more sensitive in tertiary and latent syphilis, and persists longer in the treated cases, while the technic is simple and inexpensive.

Archives de Médecine des Enfants, Paris

28: 201-272 (April) 1925

*Tubercle Bacilli in the Feces. W. Mikulowski.—p. 201.
Entero-Antigen in Enterocolitis in Children. M. de Biehler.—p. 215.
Megacolon in Child Aged 5. R. Labbé and S. Aizière.—p. 224.
Case of Thrush in Larynx. Maciucescou-Manoel and Pincou.—p. 231.
Spontaneous Immunization Against Diphtheria. J. Comby.—p. 236.

Significance of Tubercle Bacilli in the Feces.—Mikulowski's bacteriologic examination of 100 children showed no tubercle bacilli in the stools of healthy children but, in the thirty cases of pulmonary tuberculosis, tubercle bacilli were found in both sputum and stools in 60 per cent. and in the stools alone in the others. In cases without tuberculous pulmonary lesions but with intestinal symptoms (the introduction of tubercle bacilli from outside being excluded), the presence of tubercle bacilli in the feces establishes ulceration of the intestine.

Bulletin Médical, Paris

39: 463-490 (April 22-25) 1925

*Pityriasis Rosea. L. Brocq.—p. 469.
Transmission to Man of Mange from Horse. G. Thibierge.—p. 471.
External Treatment of Dermatoses. P. Ravaut.—p. 474.
Furuncles and Their Treatment. Veyrières and Guibert.—p. 477.

Etiology of Pityriasis Rosea.—Brocq asks physicians to ascertain if patients with pityriasis rosea noticed fleas in their beds or clothing shortly before the affection appeared. The scientific proof of these parasites as the transmitter of the infectious agent in the dermatosis is difficult to establish; further research is urged.

Journal d'Urologie Médicale et Chirurgicale, Paris

19: 193-280 (March) 1925

Diathermy in Urology. N. Serrallach.—p. 193.
*Kidney Function Test. R. Lévy and M. Negro.—p. 208.
Resection for Urethral Stricture. M. Iungano.—p. 230.
Effect of Deep Roentgenotherapy on Cancer of Bladder. Martin.—p. 232.
Bladder Calculi Invisible in Roentgenography. Martin.—p. 234.
Operative Treatment of Balanic Hypospadias. G. Potel.—p. 236.

Sensitiveness of Phenolsulphonephthalein Test of Kidney Function.—Lévy and Negro say that this test applied on the total urine surpasses the ureosecretory coefficient in regularity and value. In hypertrophy of the prostate after cystostomy a phenolsulphonephthalein elimination of 45 per cent. in seventy minutes, 40 per cent. in case of grave hypertension, testifies to a renal efficiency which allows prostatectomy. Applied to the urine of each kidney separately it indicates the distribution of sound parenchyma and affords valuable information for the diagnosis and prognosis of renal affections. The sensitiveness of the test is manifested in renal bacillosis at the start by a decrease in the phenolsulphonephthalein elimination of the affected kidney.

Presse Médicale, Paris

33: 521-536 (April 22) 1925

Can Date of Delivery Be Foretold? C. Jeannin.—p. 521.
*Chancre on Gum. L. Lortat-Jacob and J. Roberti.—p. 523.
*The Bacteriophage in Typhoid Fever. P. Hauduroy.—p. 525.

Chancre on Gum.—Lortat-Jacob and Roberti observed in one month two cases of chancre on the gum, the diagnosis confirmed by the appearance of secondary lesions. One of the patients had been examined by a surgeon, internist, laryngologist and two dentists, and nevertheless the chancre had not been recognized.

Part of Bacteriophage in Recovery from Typhoid Fever.—Citing d'Herelle's thirty-one cases, and personal examination of thirty cases with typhoid fever, Hauduroy affirms that the bacteriophage plays an unquestionable part in the process of natural cure. The phenomenon is explained by the lytic action of the bacteriophage on the typhoid bacilli. Cases with a predominant activity of the bacteriophage tend to recovery, while the reverse occurs in fatal cases. He made blood cultures in more than twenty patients. In the first ten days of the disease the typhoid bacilli grew but the bacteriophage was rarely present in the blood, or was only weakly active. At the end of the disease, if no typhoid bacilli could be cultivated from the blood, a strongly active bacteriophage could be demonstrated. If typhoid bacilli were present, a bacteriophage of only moderate activity was found in the blood.

33: 537-552 (April 25) 1925

*Treatment of Simple Goiter. L. Bérard.—p. 537.
*Affections of Joints in Syphilis. M. P. Weil and P. Bourgeois.—p. 538.
Antistreptococcic Serums. P. Sédallian.—p. 540.
*Modified Murphy Button. G. Carossini.—p. 541.

No Radium or Roentgen-Ray Treatment in Benign Goiter.—Bérard insists that patients with a simple goiter, not improved after six or twelve months of medical treatment, should undergo operation. Death followed only three out of 1,600 operations. In 1,200 cases with partial resection or enucleation, recurrences appeared in thirty. He believes that neither radium nor roentgen rays can induce a durable amelioration. Moreover, the adhesions from the rays cause considerable complication in case of subsequent operation. The postoperative healing is slow in the irradiated skin, which may become ulcerated even thirty days after cicatrization. Irradiations may lead to the transformation of a simple goiter into exophthalmic goiter or carcinoma. This occurred in three of his cases in the last two years.

Articular Manifestations in Tardy Syphilis.—Weil and Bourgeois call attention to three particular forms of syphilitic lesions in the joints. A unilateral hydrarthrosis, most frequently affecting the knee, may persist for a long time or heal spontaneously without treatment. The absence of stiffness or ankylosis after prolonged immobilization of the joint aids in differentiation from a tuberculous lesion. In two patients with signs of tabes the hydrarthrosis was associated with glycosuria and arterial hypertension. Generalized affections of the joints, not accompanied by heart disease, are noted in elderly syphilitic patients. The third form is arthritis deformans from thyroid insufficiency of syphilitic origin. In cases of arthritis or rheumatism of unknown nature, syphilis should be suspected.

Modified Murphy Button for Intestinal Operations.—Carossini describes his method with a six-piece device, used with excellent results in experimental operations on dogs. The device was passed from the fifth day on and union of the two intestinal segments occurred without cicatricial stenosis. The six parts were held together with catgut, and as this yielded the parts were voided separately.

Archivos de Medicina de Pernambuco, Brazil

1: 43-74 (Feb.) 1925

*The Pretuberculous Stage. Amaury de Medeiros.—p. 43.
*By-Effects of Intraspinal Anesthesia. Castro Silva.—p. 47.

The Pretuberculous Stage.—Amaury de Medeiros remarks that while we cannot speak of a prefracture stage, the pretuberculosis stage is an unmistakable entity. The problem is to distinguish between the active cases and those with old dormant tuberculous foci—which means 95 per cent. of the population.

By-Effects of Intraspinal Anesthesia.—Castro Silva has never had any grave mishaps with intraspinal anesthesia, but reports two fatalities from it in other services at Bello Horizonte. Both patients died a few minutes after the intraspinal injection; the spinal fluid was very turbid in one. The operations had been for inguinal hernia and abdominal stab wounds. In another case a physician was left with permanent paralysis of the bladder and rectum for nine years to date, after removal of an inguinal gland under intraspinal anesthesia. The paralysis has proved rebellious to all measures in Brazil and abroad. He thinks that if the later histories were known, more cases suggesting chronic damage would be discovered.

Crónica Médica, Lima

41: 299-330, 1924

Primary Aspergillosis of Upper Air Passages. J. López.—p. 299.
History of Medicine in Peru. Bello.—p. 311.
*Turpentine in Treatment of Typhus. J. C. Dianderas.—p. 320.

Turpentine in Treatment of Typhus.—Dianderas had twenty-five cases of typhus in one month last year, and all recovered under the usual measures (milk every three hours, copious drinking, epinephrin to stimulate the circulation and promote elimination of toxins, stimulants, etc.), supplemented by subcutaneous injection of an emulsion of turpentine (1 c.c. of a mixture of 10 c.c. of alcohol at 40 degrees and 10 c.c. of turpentine; 4 c.c. of a 0.5 per cent. solution of sodium chlorid). He doubles this dose when the temperature is above 38 C. and continues the injections until it drops to 36. He ascribes a specific efficacy to the turpentine in typhus, in addition to the fixation abscess effect. Macedo has been equally successful with it in two cases. The technic is similar to that advocated by Fabre of Lyons in treatment of puerperal fever.

41: 331-362, 1924

Tropical Medicine. P. Möhlens.—p. 331. See abstr., p. 557.
*Leprosy in Peru. C. E. Paz Soldán and C. Monge.—p. 344.
Revision of Penal Code in Peru. L. Avendaño.—p. 351. Conc'n, p. 379.

Leprosy in Peru.—The case reported is said to be the first presented at the Academia de Medicina, as leprosy is rare in Peru. It has never been encountered in examination of recruits, and only one autochthonous case has been known at Lima.

Medicina, Mexico City

5: 231-256 (April) 1925

*Suppuration in Ovarian Cysts. M. Godoy Alvarez.—p. 231.
Ion Treatment in Dermatology. F. Sicilia.—p. 234.

Modern Conception of Acidosis. Manzanilla.—p. 240. Conc'n.
*Glycemia in the Normal. C. Zuckermann.—p. 245.
Actinomycosis. Diagnosis and Treatment. Prolongo.—p. 251.

Suppurating Ovarian Cyst.—In Godoy Alvarez' case the cyst had caused no symptoms until after an attack of measles. Then the umbilicus region swelled, and in time there was discharge of pus from the umbilicus. It was traced to a suppurating ovarian dermoid cyst which was removed under intraspinal anesthesia without interfering with a four months' pregnancy.

Glycemia in the Normal.—Zuckermann tabulates the findings in 111 normal persons between the ages of 16 and 48. In the forty-seven women, the average was 0.088, the range from 0.063 to 0.115 per cent. In the forty-three men, the range was from 0.068 to 0.125, average 0.092. The average for the whole group was 0.09 per cent.

Revista de Medicina y Cirugia, Havana

30: 1-24 (Jan.) 1925

History of the Medical Press in Cuba. J. F. Morales López.—p. 1.
*Lactation. D. F. Ramos and J. A. Simpson.—p. 10.

Lactation.—Ramos and Simpson entitle their communication "A New Conception of Lactation." They declare that while the mother's milk is the ideal food for most infants, yet nurslings differ in their metabolism like diabetics. The individual requirements should be ascertained and met by modifying the mother's diet or modifying the milk. The organs of metabolism in infants and in diabetics are defective and need protecting. The steps in infant feeding should be first water, then reversible proteins, irreversible proteins, sugars, fat and starch. Breast feeding should not be left to blind chance.

Revista Médica del Rosario

24: 395-434, 1924

*Surgical Treatment of Pulmonary Tuberculosis. Gumersindo Sayago and J. M. Allende.—p. 395.
*Case of Trichinosis in Man. Staffieri and Barralt.—p. 411.

Thoracoplasty for Pulmonary Tuberculosis.—Sayago and Allende emphasize the importance of the operation being done in the sanatorium or hospital where the diet-hygiene after-treatment can be applied properly and continued long enough. In some of the fifteen cases described, the operation was done at two sittings. Ten of the patients are in good health, some more than three years since the intervention. One died from pneumonia, another from hemoptysis the third month, and a third from uremia a year later. One died in cachexia after a partial operation which failed to arrest the pyopneumothorax, and one child died from heart failure two weeks after partial resection of three ribs.

Trichinosis in Man.—Painful and extreme stiffness of the muscles was the special feature of the case described, with intense general malaise but no fever. The discovery of 11 per cent. eosinophils first gave the clue to the diagnosis.

Deutsche medizinische Wochenschrift, Berlin

51: 631-680 (April 17) 1925

*Nature of Internal Secretion. J. W. Harms.—p. 631.
*Biologic Significance of Anorganic Substances. K. Spiro.—p. 633.
*Colloid Changes in Muscle Fatigue. G. Embden and H. Jost.—p. 636.
*Respiration of Tissues. E. Grafe.—p. 640.
*Transmineralization in Mercury Poisoning. H. Straub and K. Gollwitzer-Meier.—p. 642.
*Hyperglycemia and Glycosuria in Gastric Affections. A. A. Hijmans van den Bergh and A. Siegenbeek van Heukelom.—p. 645.
*Sulphemoglobinemia from Phenacetin. I. Snapper.—p. 648.
Cholelithiasis. H. H. Berg.—p. 651.
*Roentgen Diagnosis of Bronchiectasia. F. v. Kovács.—p. 653.
Roentgen Diagnosis of Echinococcus of Liver. W. Arnold.—p. 655.
*Roentgen Examination of Apices. R. Gassul.—p. 655.
Recent Ophthalmologic Methods. C. H. Sattler.—p. 656.
*Protein Treatment of Pleuritic Exudates. Tellgmann and E. S. Kanellis.—p. 657.
*Pharmacology of Drosera. B. Boucek.—p. 658.
*Appliance for Pendulous Breasts. E. Glass.—p. 660.
Glass Catheter in Obstetrics. K. Seynsche.—p. 660.
Roentgen Diagnosis in Internal Medicine. R. Grashey.—p. 661.
Development of Therapy and Pathology. P. Diepgen.—p. 663.
Remarks on Proposed Criminal Law. F. Riss.—p. 663.
The Leprosaria of Crete. C. Seyfarth.—p. 665.
*Specific Resistance of Germs to Drugs. J. Morgenroth and R. Schnitzer.—p. 675.

Nature of Internal Secretion.—Harms traces internal secretion down to the division of the ovum (harmenzymes). Later on harmozones regulate the differentiation and growth of the organism. After maturity the true hormones direct the metabolism. Their action is usually bound to a closed circulation. Yet the estrual cycle even in the Turbellaria is induced by the gonads. The thyroid begins to be differentiated in the human embryo in twenty days, the lobes of pituitary in three to four weeks, the thymus in two months, the cortex of the suprarenals after the fourth week. The gonads act after one and a half months. Metamorphosis occurs in the human embryo in the second month. It is impossible to differentiate the endocrine glands according to a catabolic or anabolic action. Even the thyroid has both. Harmozones play an important rôle in the differentiation of races: bulldogs with hyperfunction of thyroid, and greyhounds depending on the pituitary. The development and regression of some malignant tumors depends on the endocrine glands, especially the cortex of the suprarenals and the gonads. All the higher animals are to a certain extent bisexual. Changes of sex occur physiologically in a starfish *(Asterina gibbosa)* from the male to the female and in the swordfish *(Xiphophorus)* in the opposite direction. Castrated male toads lay eggs after a transformation of Bidder's organ, which may be enhanced by feeding with lecithins and other substances. The regressive phase of the organism may depend also on other endocrine glands—not only the gonads, although he had excellent results with the transplantation of the latter in old dogs and guinea-pigs. The success is more frequent in males. The normal senescence leading to death is due to the destruction of ganglion cells.

Biologic Significance of Inorganic Substances.—Spiro reviews the occurrence of those inorganic ions which are present only in small quantities in the organism. The use of too pure substances (synthetic urea as fertilizer instead of guano) is a disadvantage. Toxic action does not necessarily indicate the presence of a toxic substance: a disturbance of the equilibrium of the substances may account for the action.

Colloid Changes in Muscle Fatigue.—Embden and Jost point out that not only increase in oxidation occurs during the restitution period, but also the anaerobic splitting of carbohydrate into lactic acid follows the contraction to a large extent. Consequently the energy released by the contraction is due to some as yet unknown chemical or physicochemical (colloidal) process. In the latter case an exothermic colloidal reaction would take place during contraction and the chemical processes would serve only to recharge the colloid "battery." Such a process is not yet proved, but they found that the ability to synthesize lactacidogen is impaired in a fatigued muscle in a similar way as in a dying muscle. This might indicate a reversible colloidal change. It is possible that such exothermic colloidal processes serve generally for intravital transmission of energy ("catalyzers of energy").

Respiration of Tissues.—Grafe with his collaborators used Warburg's method. They found an approximately equal consumption of oxygen by the tissues of all the animals examined. The differences were less than 50 per cent. around a middle value. At 39 C. it was about 0.2 c.c. oxygen per minute per 1 gm. of dry substance in small mammals and 0.14 c.c. in large mammals. Although the basal metabolism of a mouse per gm. is 33.3 times greater than that of an ox, the surviving tissues from the ox breathe only 1.7 times stronger. This means that in a living ox the respiration of the tissues is throttled down to one twentieth of their oxygen intake when isolated. Various hormones, including insulin, and comparatively wide changes of the concentration of hydrogen, potassium, and calcium ions and of osmotic pressure had no influence. Only the bicarbonates added to physiologic sodium chlorid solution increased the respiration. The protein metabolism measured by deamidization was also increased in surviving tissues and could be restricted by the presence of glucose—just as in the living animal.

Transmineralisation in Mercury Poisoning.—Straub and Gollwitzer-Meier publish a detailed study of the blood in a case of poisoning with mercuric chlorid. An enormous cleavage of proteins is associated in the first anuric phase with retention of sodium chlorid and bicarbonate in the tissues and a subsequent increase in the blood when diuresis sets in. The significance of the kidneys for the regulation of the equilibrium is overestimated.

Hyperglycemia and Glycosuria in Gastric Affections.—Hijmans van den Bergh and Siegenbeek van Heukelom found in a number of patients with gastric and duodenal ulcers a moderate hyperglycemia and an increased glycemic reaction together with glycosuria after ingestion of 50 gm. of glucose.

Sulphemoglobinemia from Phenacetin.—Snapper observed two cases of marked cyanosis due to intraglobular sulphemoglobinemia after intake of acetphenetidin. He produced the condition experimentally in rare cases after giving 3 gm. precipitated sulphur by mouth for ten days, more easily after giving 1.5 gm. acetphenetidin, and still more easily by combining both methods. The drug sensitizes the red corpuscles to the action of hydrogen sulphid which is normally resorbed from the intestine. Sulphemoglobinemia may occur with minimum amounts of hydrogen sulphid in the blood and may not be present with larger amounts. Diseases of the liver are a predisposing factor.

Roentgen Diagnosis of Bronchiectasis.—Kovàts recommends the intratracheal injection of lipiodol in roentgen examination of doubtful cases of bronchiectasis.

Roentgen Examination of Apices.—Gassul has the patient bend forward while a roentgen examination of the apices is made.

Protein Treatment of Pleuritic Exudates.—Tellgmann and Kanellis recommend injections of foreign protein in treatment of exudative pleurisy.

Pharmacology of Drosera.—Bouček attributes the action of extracts from Drosera to their content in formic acid. There is no reason to assume any curative effect in arteriosclerosis. The peptic ferment contained in the extract is less active than pepsin.

Appliance for Pendulous Breasts.—Glass attributes the frequent subacute mastitis with formation of nodules in virgins and young women to a stretching of the fascia and lymphatic vessels by the formation of a pendulous breast. A well fitted appliance to lift and hold the breast is necessary. The modern brassieres which press the breasts down are extremely objectionable.

Specific Resistance of Germs to Drugs.—Morgenroth and Schnitzer point out that true specific resistance of bacilli to drugs is rare. They succeeded only with pneumococci, which became resistant to ethylhydrocuprein without losing their virulence. Otherwise the bacilli became at the same time avirulent and changed also in growth and other respects.

Klinische Wochenschrift, Berlin

4: 729-792 (April 16) 1925

Physiology of Surgery of Blood Vessels. Kirschner and Stegemann.—p. 729.
Intestinal Occlusion and Its Treatment. W. Braun.—p. 733.
*Resection of Pericardium in Concretion. Guleke and Lommel.—p. 737.
*Ethylene Anesthesia. A. B. Luckhardt.—p. 739.
*Iodin Treatment of Goiter. E. Bircher.—p. 742.
Activation of Mesenchyma. W. v. Gaza.—p. 745.
*Acute Necrosis of Pancreas. W. Sebening.—p. 749.
Homogeneous Deep Irradiation. H. Rahn.—p. 754.
*Tonus of Striated Muscles and Vegetative System. F. Brüning.—p. 756.
*Action of White Phosphorus. H. Bernhardt and C. R. H. Rabl.—p. 758.
*Intracellular p_H. M. Schmidtmann.—p. 759.
Intervertebral Calcinosis. T. Bársony and F. Polgár.—p. 759.
Treatment and Prognosis of Tumors of Colon. A. W. Fischer.—p. 760.
Principles for Amputations and Prostheses. M. zur Verth.—p. 765.
Explantation. W. Schulze.—p. 770.
Beck's Blood Transfusion. G. Dencks.—p. 790.
*Action of Mistletoe on Circulation. Bijlsma.—p. 791.

Resection of Pericardium in Concretion.—Guleke and Lommel report on the eighteenth case of this operation. The concretion of the pericardium is not necessarily combined with an accretion. Such patients have no systolic retraction of the chest. The characteristic feature is the absence of murmurs and of enlargement of the heart in the presence of hydrops, edema, cyanosis, dyspnea and enlargement of the liver. The veins of the neck are bulging and present a systolic and diastolic collapse. The operation is difficult and the border between the fibrous tissue and the heart muscle uncertain. The borderline between the auricles and ventricles has to be handled with especial care, since manipulations in this region may produce grave disturbances of the heart action.

Ethylene Anesthesia.—Luckhardt publishes the lecture he held at Freiburg i. Br. on the history and use of ethylene anesthesia.

Iodin Treatment of Goiter.—Bircher attributes the increase of the incidence of toxic goiter to the iodin treatment of goiters. There are over 3,500 cases of exophthalmic goiter in Switzerland. Adenomatous goiter is frequently injured by iodin. Over 2,000 instances of this have been reported in Switzerland. He considers small doses given for a long period more dangerous than single large doses. Hypertonia and hyperperistalsis of the stomach with hyperacidity is one of the symptoms of the injury. Diabetes is aggravated by iodin. Sterility in the second and third generation was observed experimentally. He requires caution with iodin and combination with phosphates, calcium, quinin, silicates or substitution of these remedies for it.

Acute Necrosis of Pancreas.—Sebening found cholelithiasis in 80 per cent. of his twenty-five cases of acute necrosis of the pancreas. Twenty-one of them recovered after operation.

Tonus of Striated Muscles and Vegetative System.—Brüning's observations indicate that the tonus of striated muscles is independent of the vegetative innervation. No decrease in tonus was found after periarterial sympathectomies.

Action of White Phosphorus.—Bernhardt and Rabl observed a distinct action of small doses of white phosphorus in young rats fed on diets containing various amounts of minerals. Normal animals fed with it had sclerotic bones. Animals who received only little calcium and phosphates had normal bones, unless white phosphorus was added. These animals had marked rachitic changes.

Intracellular p_H.—Schmidtmann rates the p_H of cells between 6.4 and 7.6. Epithelial cells are more alkaline than the connective tissue. The islands are more acid (p_H 6.6-6.9) than the parenchyma of the pancreas (7.3-7.5). The center of the lobules of the liver is more acid than the periphery. Endothelia of the capillaries (including Kupffer cells) had a p_H of 6.4-6.5 in all the lower and higher animals tested.

Pharmacology of Mistletoe.—Bijlsma found after intravenous injections of an extract from mistletoe (viscum album) a lowered blood pressure. It was fatal with larger doses. The drug dilates the blood vessels, but does not act on the centers in the medulla. The pulse is slow because of a central irritation of the vagus.

Medizinische Klinik, Berlin

21: 569-608 (April 17) 1925

Physiology and Pathology of Interbrain. L. R. Müller and R. Greving.—p. 569.
Innervation, Cell and Organism. J. Boeke.—p. 574.
Immunity Against Transplantable Tumors. Uhlenhuth and Seiffert.—p. 576.
*Symposium on Familial Tuberculosis. L. Aschoff et al.—p. 582.
*Roentgen Treatment of Gastric Ulcer. R. Lenk.—p. 583.
*Tuberculosis of Nose. L. Soyka.—p. 586.
Insulin Treatment. W. David.—p. 587.
*Subjective Disturbances in Pneumoperitoneum. T. Simon.—p. 589.
*Pure Cell Strain Cultures from Tumors. R. Erdmann.—p. 590.
Vitamins in Pediatrics. W. Schmitt.—p. 593.
*Chlorin Treatment. v. Schnizer.—p. 595.
Cancer and Its Treatment. O. Strauss.—p. 596. Cont'n.
Medicolegal Import of Perversions. Friedländer.—p. 606. Conc'n.
Supplement. Survey on German Pediatrics in 1924. H. Brüning.—pp. 47-66.

Symposium on Familial Tuberculosis.—The *Medizinische Klinik* made an inquiry into the question, whether familial tuberculosis is due to exposure alone or mainly to an inherited constitutional susceptibility. All of the authors replying in this issue regard the exposure as the main factor. Liebermeister admits an inherited nonspecific lowering of resistance to all diseases and points to the gravity of

pyogenic infections and cancer in tuberculous families. Meinertz points to the larger percentage of tuberculosis in adults who belong to such families, as evidence of such predisposition. Aschoff excludes predisposition as a factor in children. Anomalies of the thorax play a rôle in the reinfection. Yet it seems that the time, duration and extent of the primary infection in childhood determines its progress. In aged people neither infection nor predisposition is important: the late recurrence is the main point. Meinicke believes that people from tuberculosis families are more resistant to tuberculosis and have a better prognosis than others.

Roentgen Treatment of Gastric Ulcer.—Out of forty-three patients with ulcers of stomach or duodenum treated by Lenk with roentgen rays, twenty-one are free from symptoms and thirteen are much improved. In all the favorable cases a distinct improvement was observed within two to three weeks. Even niches disappeared.

Tuberculosis of Nose.—Examination of the nose for tuberculosis by school physicians is regarded by Soyka as the most important factor in prevention and early treatment of lupus.

Subjective Disturbances in Pneumoperitoneum.—Simon tested on himself the disturbances arising from pneumoperitoneum by 1,800 c.c. of oxygen insufflated within ten minutes. The piercing of the peritoneum hurt considerably. After insufflation of 500 c.c. he had a tense feeling which became disagreeable in the umbilical region after 800 c.c. At 1,000 c.c. there was dyspnea, especially when he changed his position. After 1,200 c.c. pains in both hypochondriums radiated to the neck—especially in the region of supraclavicular nerves. All these sensations increased in the right decubitus and especially when he sat up. Hiccup set in and two minutes of sitting were followed by a collapse with abdominal facies, small and frequent pulse and nausea. He recovered from the collapse after ten minutes and was able to stand up. After two hours the gas was removed and the disturbances subsided with the exception of pains in the shoulders, which lasted for three days. Some gas was still present on the fourth day. He warns against too free indications for pneumoperitoneum. The collapse is dangerous. Two fatalities (injury of bowel and embolism) have already been reported.

Pure Cell Strain Cultures from Tumors.—Erdmann devised a method for culture of isolated cells from tumors. The stroma and epithelial part cultivated separately do not take in animals. She is convinced that the stroma and reticuloendothelial cells are more important than the cancer cells. She believes that an ultravisible virus removes the inhibitions which cause the normal equilibrium of growth. Then the growth promoting substances may act. She produced a sarcoma by inoculating embryonic chicken cells with a pituitary extract to a fowl kept on a vitamin-free diet.

Chlorin Treatment.—Schnizer reports on Vedder and Sawyer's investigations.

Mitteil. a. d. Grenzgeb. der Med. und Chir., Jena

38: 287-440, 1925

The Cardia with Cardiospasm. J. Palugyay.—p. 287.
Polyneuritis, After Mechanical Jaundice with Injury of Liver. E. Cornils.—p. 313.
*Hemolytic Jaundice. K. Diehl and F. Wohlwill.—p. 321.
Absorption in Spectrum of Serums. P. Schweizer.—p. 344.
Oxygen Deficit and the Thyroid. Deucher.—p. 362.
*Rehn Kidney Function Test. R. Allemann.—p. 391.
*Protein Therapy for Ulcer. F. Baake.—p. 404.
Iodized Oil in Spinal Cord Tumors. H. Mingazzini.—p. 421.
*Hypertonic Glucose Solution in Peritonitis. J. K. Narat.—p. 429.
Naunyn's Reminiscences. L. Lichtheim.—p. 437.

Hemolytic Jaundice.—The girl of 16 presented the typical form except that there was no history of hemolytic jaundice in the family. She died on the table after splenectomy. Changes in the liver were mostly ascribable to the pronounced status thymicolymphaticus. The periods of exaggerated urobilin excretion had generally been accompanied by higher temperature.

The Rehn Kidney Function Test.—Allemann has applied Rehn's S. U. A. test (Säure-Umschlag-Alkalimethode) in eighty cases, and extols its physiologic basis and the reliable findings. Dilute hydrochloric acid is given by the mouth, and followed by sodium bicarbonate by the vein, all at one sitting. The findings throw light on the capacity of the kidneys to regulate the acid-alkali balance of the blood.

Protein Therapy in Gastric and Duodenal Ulcers.—On the basis of sixty cases, Baake advises protein therapy as a routine measure in these cases, even when dietary and alkali treatment have failed.

Experimental Study of Intra-Abdominal Injection of Hypertonic Glucose Solution.—Practically the same article was summarized, Dec. 1, 1923, p. 1906.

Monatsschrift für Geb. und Gynäkologie, Berlin

60: 1-138 (April) 1925. Dedicated to Paul Baumm

Present Status of Prussian Midwifery. P. Rissmann.—p. 1.
Midwife Training in the Rhein Province. E. Martin.—p. 3.
Pregnancy and Ileus. F. Stork.—p. 12.
Volvulus of Uterus During Labor. M. Bretz.—p. 20.
Eclampsia. W. Peters.—p. 25.
*Uterus Injuries in Third Stage of Labor. Kutter.—p. 35.
Secondary Abdominal Pregnancy. F. Mann.—p. 45.
Blood Transfusion in Extra-Uterine Pregnancy. Hammerschlag.—p. 51.
Treatment of Vesicovaginal Defect. M. Bretz.—p. 55.
Tuberculosis of Uterine Cervix. N. Ellerbrock.—p. 62.
Thrush Vaginitis. S. Stephan.—p. 65.
Modified Lever-Pessary. P. Rissmann.—p. 70.
Homeotransplantation of Ovaries. H. Harttung.—p. 74.
Long Anesthesia and Temperature Regulation. Reck.—p. 81.
Fistulas After Hysterectomy. Maisa.—p. 90.
War Diet and Development of Female Genitals. F. A. Scheffzek.—p. 98.
Prophylactic Immunization in Pregnancy. Haertel.—p. 104.
Abnormalities in Third Stage of Labor. H. Baumm.—p. 113.
Lipoid Content of Corpus Luteum. A. Hermstein.—p. 125.
Hypnosis in Labor. U. Franke.—p. 128.
Operation for Posterior Parametritis. J. Krebs.—p. 130.

Uterus Injuries in Third Stage of Labor.—Kutter describes three cases. He says that forcible expression of the placenta can by no means be considered a harmless measure. Every atonic hemorrhage following this intervention suggests a possible rupture of the uterus.

Monatsschrift für Kinderheilkunde, Leipzig

30: 1-96 (April) 1925

Colloid Reaction of Cerebrospinal Fluid in Nervous Disturbances in Children. A. Marchionini.—p. 1.
*Spastic Bronchitis in Infants. K. Ehle.—p. 17.
Mastic Test in Pediatrics. S. Levy.—p. 33.
Myeloid Reaction in Child with Congenital Hemolytic Anemia. K. Meyer.—p. 46.
Remarks on Therapeutics. K. Waltner.—p. 52.
*Circulation Disturbances After Measles. W. Händel.—p. 55.
*Asphyxia in New-Born. W. Courtin.—p. 60.
*Erythrodermia Desquamativa. H. Kaufmann.—p. 64.
*Insulin in Diabetes Mellitus in Children. Freise.—p. 73.
"The Hemoclinical Status." E. Mora.—p. 82.

Spastic Bronchitis in Infants and Young Children.—Ehle says that the first symptom is restlessness. An expiratory stridor from bronchial constriction is noted. The temperature is 39 to 40 C. The facial expression is anxious and the head retracted. The anterior lung margin is usually at the costal arch, the posterior, at the eleventh or twelfth rib. The affection often continues for weeks, sometimes without intermission. The clinical picture corresponds to that of "bronchotetany." He injected subcutaneously 0.25 to 0.5 c.c. of epinephrin in a 1:1,000 solution. The best results were obtained with ethyl carbamate. It acts directly by paralysis of the peripheral vagus impulses, also by inducing general anesthesia and relaxation of the bronchial spasm. He considers it unequalled in acute cases. The dose up to 4 months old is 0.3 to 0.5 gm. by mouth, 0.8 to 1 gm. by enema; from 4 to 6 months old, 0.6 to 1 gm. by mouth, 1.5 gm. by enema; from 7 to 24 months old, 1.5 gm. by mouth and 2 gm. by enema. If needed, two thirds of the dose may be repeated after half an hour. Small bromin doses reduce the central excitability (Limper). He had good results with 0.6 gm. in a child aged 6 months, with 0.4 gm. in a child aged 2 months. His name for the affection is *blähungsbronchitis*.

Local Circulation Disturbances After Measles.—In the first of Händel's two cases of grave disturbance in the extremities, the attacks included cyanosis, with edema. The local asphyxia responded to hot applications and massage,

with repeated recurrence on cessation of the treatment, and finally recovery. In the other, a waxen pallor and chill, appearing in the feet, after two days extended to the navel; in this case the treatment proved ineffective. He attributes these disturbances to toxic injury producing in the first instance, a capillary paralysis, in the second capillary spasm.

Asphyxia in New-Born from Incomplete Development of Frenum Linguae.—In Courtin's case of an infant with abnormally movable tongue, the cyanosis could be overcome by pressing the swallowed tongue down with a spatula. The asphyxia also abated when the infant in crying opened his mouth wide, so that the broad folded tongue no longer occluded. As the infant grew stronger the attacks gradually diminished and finally ceased.

Treatment and Classification of Erythrodermia Desquamativa.—From observation in eighteen cases, with one death, and after-examination in the twelve, Kaufmann concludes that this is an acute skin affection peculiar to the first months of life, distinguished from the usual cutaneous affections in exudative diathesis in infancy by the nature of the symptoms, the absence of recurrence, and the slight irritability of the skin after recovery. He cautions against too rapid healing and recommends the application of pure cod liver oil, or cod liver oil with the addition of 20 to 30 per cent. of zinc oxid, and attention to the general condition. Besides dietetic treatment, intramuscular injection of blood proved particularly useful, especially in loss of weight and collapse.

Insulin Treatment in Diabetes Mellitus in Children.—Freise could not establish an absolute decrease in tolerance during about a year's time, although on return to the insulin treatment higher doses were necessary. The standardization of the different insulin preparations is apparently not always satisfactory. Before a change of insulin, the diminished effect was always established by determination of the blood sugar. Contrary to the American findings, he obtained no results from insulin in his three cases of acetonuria of nondiabetic origin in children.

Münchener medizinische Wochenschrift, Munich

72: 623-670 (April 17) 1925

Size of Heart After Exertion. O. Bruns.—p. 623.
Subaqual Lavage of Colon. O. Müller.—p. 626.
*Aphorisms on Inflammation. L. Aschoff.—p. 627.
*Pathogenesis of Pernicious Anemia. R. Stephan.—p. 628.
Pathogenesis and Treatment of Migraine. H. Kimmerer.—p. 633.
*Blood Iodin in Man. W. H. Veil.—p. 636.
Pathology of Chronic Streptococcus Sepsis. H. Siegmund.—p. 639.
*Changes of Streptococci. R. Hubert.—p. 643.
*Is Glucose a Hormone? F. Fischler.—p. 645.
Roentgen Treatment of Inflammations. F. Bauer.—p. 646.
Radium Treatment of Cancer of Esophagus. E. Schempp.—p. 648.
Nonspecific Treatment. W. Weichardt.—p. 650.
*Arndt-Schulz Law. H. Handovsky.—p. 652.
Roentgen Treatment of Gynecologic Cancer. F. Pordes.—p. 653.
Cystinuria and Alkaptonuria. F. Umber.—p. 653.
Sanatoriums and Fight Against Tuberculosis. K. H. Blümel.—p. 655.
Recent Progress in Chemistry. W. Grassmann.—p. 657.

Aphorisms on Inflammation.—Aschoff points out that the clinician will always disagree with the pathologist as long as inflammation is regarded as a certain degree of reaction. The surgeon refuses to regard as inflammatory the sequelae of an aseptic laparotomy, although the pathologist must do so. The term—if it survives—should be identical with "reaction," and this should be divided into regenerative, reparative, and defensive.

Pathogenesis of Pernicious Anemia.—Stephan points to the common features of the two diseases described by Addison: the bronze disease and pernicious anemia. A peculiar pigmentation of the skin and the pigment reaction to light are very strong in both diseases. Adynamia is present in pernicious anemia, and anemia is constant in Addison's disease. Hypoglycemia and increased sugar tolerance characterize both affections. He found frequently signs of osteomalacia and tetany in pernicious anemia. A shortened coagulation time due to abundance of thrombin was observed by him constantly in this disease. Its amount is parallel with the concentration of a proteolytic ferment in the serum of these patients. It seems to originate in the reticulo-endothelial cells—the blood from the splenic vein containing large amounts of it. He attributes pernicious anemia to an increased function of the reticulo-endothelial apparatus. He had found that extirpation of a suprarenal has a beneficial effect in polyglobulia and believes that the hormone of the suprarenal cortex inhibits the action of the reticulo-endothelial cells. Intraperitoneal implantation of the suprarenal cortex suppressed the bilirubinemia and increased the number of blood cells for a few days in a patient with pernicious anemia. Injection of an extract from suprarenal cortex increased the index and number of red cells for a few hours in pernicious anemia patients. He tried with Floercken to increase the action of the reticulo-endothelial system by extirpation of a suprarenal in cancer patients, with some success.

Blood Iodin in Man.—Veil reports on the investigations he made with Sturm, using Fellenberg's modification of Chatin's method. They found in healthy subjects during the summer on the average 0.0128 mg. of iodin per hundred cubic centimeters of blood, and 0.0083 during the winter. Two thirds of the iodin was organically bound. Exogenous factors play a small rôle. Although the food was the same as in the controls, simple and hypothyreotic goiter was accompanied by low values, which, however, did not change with the seasons. Exophthalmic goiter patients had high figures (up to 0.070 mg.). The level was lower in fatal cases (0.022 mg.). Hyperiodemia was found in menstruation and toward the end of pregnancy. It was also present in tachycardia due to diseases of the heart. Epinephrin and atropin increased the iodin level—especially the inorganic fraction—pilocarpin, cholin, digitalis, insulin, and fever lowered it.

Changes of Streptococci.—Hubert was able to change every strain of hemolytic streptococci he tested into the viridans type by injecting certain optimal quantities in mice or by treating the germs with drugs. He believes that the streptococci are a unit independent of the virulence, hemolysis, and other changeable characters. The viridans type can originate from both the hemolytic streptococcus and the pneumococcus.

Is Glucose a Hormone?—Fischler concludes that glucose has all the characters of a true hormone: it is secreted by specific cells (liver) into the blood stream and its deficiency in the blood causes grave symptoms (glycoprivic intoxication), which can be temporarily relieved by its supply from the outside.

Arndt-Schulz Law.—Handovsky criticizes the so-called Arndt-Schulz' biologic fundamental law, which says that small doses stimulate, while large ones kill. He quotes from Arndt's study various phenomena, including the dependence of the motion of intracellular organisms on the temperature and the small physique of geniuses, explained by the same law. Schulz added the important observation that fermentation is enhanced by small doses of mercuric chlorid. Handovsky points out that careful analysis of the phenomena reveals various other causes. For instance, the enhancing action of small amounts of histamin on the division of some protozoons is due to the stimulating action of autolytic products of the protozoons, which were killed by it. The law mentioned can be applied only to the just irritating and just killing intensity. The interesting and therapeutically important part lies between them. (The law had been first formulated by Galen.—Ed.)

Wiener klinische Wochenschrift, Vienna

38: 425-448 (April 16) 1925

*Ulcer and Carcinoma of Stomach. V. Orator.—p. 425.
*Gastric Function During Menstruation. L. Hess and J. Faltitschek.—p. 427.
Inconspicuous Scars. K. Foramitti.—p. 429.
*Paralytic Paroxysmal Hemoglobinuria. A. Hittmair.—p. 431.
*Formation of Bilirubin. E. Stolz.—p. 434.
Postsurgical Treatment in Fractures. C. Ewald.—p. 437.

Connection Between Ulcer and Carcinoma of Stomach.—Orator's conclusions are made on the basis of 700 cases of ulcer and 150 of carcinoma of the stomach, confirmed by microscopic findings. Change of the ulcer into a cancer occurred in about 10 per cent. Of the ulcers localized in the middle part of the stomach, 2 per cent. degenerated; of those in the prepyloric region, 30 per cent. No cancer was found

in ulcers of the duodenum. In 90 per cent. of the cases the carcinoma was associated with a diffuse precancerous gastritis. The usual situation of carcinoma in the pylorus and the frequent degeneration of the ulcer into a malignant tumor testify to the high irritability of the pyloric mucosa and its tendency to proliferation. Hence removal of the pyloric portion of the stomach may be advisable as a prophylactic measure in precancerous gastritis.

Stomach Function During Menstruation.—Hess and Faltitschek's observations on twenty-one women showed an increased cholin production in connection with the menstruation. This increase modifies the equilibrium of the vegetative nervous system, inducing hyperirritability of the parasympathetic nerves, with exaggerated motility and secretion of the stomach.

Case of Paralytic Paroxysmal Hemoglobinuria.—Hittmair adds a new case to the three recorded to date. The six attacks of the patient started suddenly and were characterized by hemoglobinuria and muscular pains, either spontaneous or from pressure. Marked weakness of the limbs was accompanied by a total or partial absence of reflexes. The phenomena are ascribed to an intoxication, with retention of the toxic products in the muscles and deficient elimination by the rapidly enlarged liver. The toxic origin of the affection explains the changes in the kidneys, the disturbances in the central nervous system, as insomnia and restlessness, and the muscle degeneration with involvement of the myocardium. The connection of the muscle pains with the hemoglobinuria and the absence of dissolved hemoglobin in the blood serum indicate the elimination by the urine of muscle hemoglobin, not of erythrocytes. Predisposition and intense efforts may play a part in the etiology of the affection.

Problem of Formation of Bilirubin.—Stolz observed a case of primary carcinoma of the liver with metastases in the bone marrow. Bilirubin was present in the cancer tissue although it contained no Kupffer cells.

Zeitschrift für Tuberkulose, Leipzig

42: 177-256 (April) 1925

Septicemia in Tuberculosis. E. Loewenstein.—p. 177.
Carbohydrates in Tubercle Bacilli. J. Warkany.—p. 184.
*Tubercle Bacilli in Otitis Media. M. Nakamura.—p. 189.
Cultivation of Tubercle Bacilli from the Blood. Ashimura.—p. 202.
The Bone Marrow in Tuberculosis. T. Koizumi.—p. 208.
Disinfection of Tuberculous Sputum. Y. Sumiyoshi.—p. 216.
Experiments in Allergy and Immunization. Fischl.—p. 218.
Welfare Work in Cases of Surgical Tuberculosis. Jerusalem.—p. 228.

Tubercle Bacilli as Cause of Otitis Media.—Nakamura's bacteriologic study of the ear secretion, by culture or tests on animals, in eighty cases of various forms of middle ear infections, revealed tubercle bacilli in 23.75 per cent. The more or less severe pulmonary affection in thirty-two of the cases seems to indicate a relation between the pulmonary disease and the suppuration in the middle ear. He advises cultivation of the bacteria and tests on animals in every prolonged otitis media. As the microscopic test is unreliable, and as tuberculous otitis presents no special symptoms, the establishment of tubercle bacilli as the cause of the otitis depends on these methods.

Zentralblatt für Chirurgie, Leipzig

52: 849-912 (April 18) 1925

Technic for Suture of Bones. M. Kirschner.—p. 849.
*Protection Against Injury from Anesthetic. G. Perthes.—p. 852.
Resection of Lower Jaw in Acromegaly. G. Blessing and Rost.—p. 855.
Large Pial Epidermoid at Base of Brain. F. v. Hofmeister.—p. 857.
Technic for Cisterna Puncture. D. Kulenkampff.—p. 862.
Preoperative Treatment of Exophthalmic Goiter. A. Krecke.—p. 866.
Case of Bronchus Cyst. G. Sultan.—p. 869.
*Postoperative Reflex Cardiac Disturbances. F. Sauerbruch.—p. 873.
*Operative Treatment of Polycystic Kidney. P. Clairmont.—p. 878.
Fracture of Femur Close to Head. F. König.—p. 883.
*Medial Fracture of Neck of Femur. Anschütz and Portwich.—p. 887.

Injury from Anesthetic to Participants in Operations.—Perthes urges protection against this unnecessary injury, and advises the installation of electric exhaust ventilators. He describes a ventilating apparatus which he has found indispensable.

Reflex Cardiac Disturbances from Mechanical Factors After Thoracoplasty.—Sauerbruch reports three cases of changes in the heart rhythm due to reflex action from traction on nerves or pressure from a tampon, acting on the right heart, or its innervation. The extreme arrhythmia and flutter subsided when the mechanical factors were abolished. Recognition of the cause of the condition admits a favorable prognosis in spite of the grave clinical picture.

Operative Treatment of Polycystic Kidney.—In the removal of one kidney in cases of bilateral affections, Clairmont sees the extreme tendency of destructive surgery, attempting thus to treat complicated causal and functional relations. How much is destroyed and how much the patient's life shortened cannot be estimated. To date, in cases of bilateral kidney cysts no dependable indications for nephrectomy or for conservative interventions, based on thorough function tests, have been found.

Treatment of Medial Fracture of Neck of Femur.—Anschütz and Portwich denounce extirpation of the head in recent fractures. Their ten cases with plaster applied in extreme abduction and inward rotation (Whitman) resulted favorably in 90 per cent. They advise operative treatment of the head followed by implantation in the trochanter only in cases of pseudarthrosis after four to eight months.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 1681-1788 (April 11) 1925

Intestinal Infarct. F. Croes.—p. 1687.
Neurofibromatosis and Sarcoma. H. Feria.—p. 1692.
Degeneracy. G. P. Frets.—p. 1699.
Retrograde Intussusception After Gastro-Enterostomy. Kopp.—p. 1709.
Paralysis of Facial Nerve in Otitis Media. H. Burger.—p. 1719.
Hereditary Neuritis Optica. J. A. van Heuven.—p. 1723.
Unusual Finding in Excised Appendix. A. G. J. Hermans.—p. 1725.

1: 1789-1880 (April 18) 1925

*Pulmonary Embolism. W. M. De Vries.—p. 1795.
Treatment of Hay Fever. J. S. Galjart.—p. 1803.
Laboratory Methods in Acute Infectious Diseases. D. Herderschee.—p. 1810.
Acrodynia. E. S. Frank.—p. 1819.
Gastric Hemorrhage After Aspirin. J. L. van Bodegom.—p. 1823.
Diseases Caused by Ticks. J. H. Broers.—p. 1824.

Pulmonary Embolism.—De Vries' conclusions are based on forty-six cases of sudden death from embolism of the pulmonary artery or its branches (bilateral in thirty-eight cases, unilateral in six). He does not regard infection as the usual cause. Fatal embolism occurs not only after operations and in certain diseases, but also after uncomplicated fractures and slight trauma. It does not arise in acute fatal infections, as sepsis and pyemia, after wounds and operations. That the condition is most common after operations does not, he thinks, testify for the infection theory. The result may be due to the frequency of abdominal operations and of operative treatment in patients in generally bad condition. Of his cases, 25 were operative, 8 followed trauma, 12 occurred in various diseases and 1 postpartum; of the 25, all but 2 were abdominal cases.

Norsk Magazin for Lægevidenskaben, Oslo

86: 321-428 (April) 1925

Tumors with Xanthoma Tissue. F. Harbitz.—p. 321.
Osteochondritis Dissecans. L. Nieuwejaar.—p. 349.
Puerperal Thrombosis and Pulmonary Abscess. G. Schaanning.—p. 354.
Case of Mento-Posterior Face Presentation. O. Rømcke.—p. 357.
Case of Erythremia. J. Arnesen.—p. 358.
*Relations Between Tuberculosis in Cattle and in Man. K. F. Andvord.—p. 361.

Relations Between Tuberculosis in Cattle and in Man.—Andvord says that 80 to 90 per cent. of tuberculosis of the lymphatic glands is due to bovine infection. He has previously referred to the antagonism apparent as a rule between the frequency of benign tuberculosis in cattle in a country or region and the mortality from pulmonary tuberculosis. Further data sustaining this conception are here presented. He finds reason to assume that bovine infection of the milk, besides being the direct cause of a certain tuberculosis mortality in children, may also by slight infections produce in the growing generation a certain immunity against more malignant infection from human pulmonary tuberculosis.